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SEASONAL DEMAND FOR FARM LABOR

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SUMMARY

Seasonal use of labor in 1966 varied by farm size, type and production region. Vegetable, fruit and nut and cotton farms used considerably more labor than other farming operations of equivalent economic size. Operations such as these that had dramatic variations in man-hour inputs during the year generally used more labor than the family could furnish. Thus heavy use of hired labor was necessary during peak seasonal activity.

Farmers on certain types of farms--row crop and fruit farms--use very little family or hired labor during the off-season. But they have to provide for major increases in labor needs during harvest.

Many of the dairy, and other livestock operations use a more constant flow of labor nearly all year. Thus their increases in manpower for the summer are not so great as on seasonal labor intensive crop farms. Much of the seasonal increase in labor on dairy and livestock farms comes from unpaid family workers (other than operator and wife) and temporary hired help.

Because of climatic conditions, crop maturation occurs at different time periods in different regions. Thus the peak month for farm labor activity differs by regions. The large "other livestock" farms in the midwestern regions use a lot of labor with two peak periods. These farms have large beef and hog operations with calving and farrowing in May and October causing the operators peak work load to be during these months in those regions.

On the small size farms (less than $20,000 sales) farmers tended to increase their own labor input as their total farm labor needs increased, but they did not increase their proportionate share of the work load.

The proportion of total labor done by the operator was greatest on farms with $20,000 to $39,999 sales. His share of labor declined as farm size increased or decreased beyond this sales range. On the larger farms the work was shifted to hired labor whereas the lower the income from farm sources, the greater the shifting of farmwork to the wife and other unpaid family workers.

The peak work month differs for various members of the family. The operator's peak work month was generally during planting, farrowing or harvesting. The wife appeared to be the reserve source of labor. Her peak period usually was early in the spring or late in the fall. This would coincide with the other family members being in school during the planting season and at the end of the harvest season.

Other family members most always worked more during July than any other month. Many are still in school early in June; crop conditions are usually less demanding in August, and they are back in school by mid-September, thus July is the peak month of use of other family labor.

As for hired workers, farmers used more hours of regular hired labor during July. This varied somewhat by region, but the greatest demand for regular hired workers occurred during July for 8 of 11 different types of farms. In contrast, peak demand for seasonal workers was about as varied as the types of farms. Only cash grain, vegetable and poultry farms and livestock ranches reported peak work months for seasonal workers during the summer months. Fruit farmers heavily involved in citrus harvest and tobacco farmers using seasonal workers to strip burley tobacco leaves, both used more hours of hired seasonal labor in December.

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INTRODUCTION

Due to the shrinking sources of farm labor, gearing up for the peak season becomes more difficult each year. The farmer has to place considerable reliance on his family's ability to meet much of the manpower needs not only during slack periods, but even during the busiest seasons.

This report shows the variation in total farm labor needs with primary emphasis on the seasonal labor input of the family and secondly the seasonal labor input of the hired workers. The peak months of labor activity for each member of the operator's family and his hired labor; their proportionate share of the total labor inputs and how this input varies seasonally by farm size, type and farm production region are discussed.

Farm operations that have significant variation in manpower needs during the year will likely use more labor than the operator's family can furnish. Thus, there are many farms with heavy infusions of hired labor during peak seasonal activity. Crops mature at different time periods in different regions; therefore peak labor activity also varies. Using National or regional aggregative data most peak periods occur during June through August. However, restrict the range to Southeast winter vegetable and citrus farms and peak operations shift to an

earlier date. In the Southern Plains, due to the importance of cotton--two peak periods occur--one for pre-harvest; the other for harvest. While dairy farms have peak periods, most of the increased man-hours at peak comes from seasonal hired and unpaid family workers other than the wife.

This report can be used by agencies who are working directly with farmworkers to see the major task of farmers in trying to acquire sufficient help to harvest their crops. The shortness of the season in some regions and among certain types of farms compounds the employment problems of both employer and employee.

Data in this report are based on information obtained in the 1966 Pesticide and General Farm Survey. The methods used, survey definitions, and distribution of farms in this sample survey compared with other surveys, or estimates are shown in ERS Bulletin No. 459. 1/

In order to separate farms into broad, meaningful groups to make analysis less cumbersome, the author has made the following breaks: 2/

Large-scale farms--Sales of $100,000 and over
Large farms--Sales of $40,000 to $99,999
Medium farms--Sales of $20,000 to $39,999
Small farms--Sales less than $20,000

SEASONALITY OF FAMILY LABOR

Total demand for all farm labor ranged from 508 hours per survey farm in February to 807 hours in July--an increase of 59 percent from low to peak seasonal use.

1/ ~~Family and Hired~~ Labor Used on U.S. Farms in 1966, U.S. Dept. of Agric. Economic Research Service.
2/ Labor use patterns or practices were found to be more manageable in these groupings. The author is not attempting to set new size standards, but feels these ranges are more related to current farm sales.

The operator and his family provided 56 percent of the labor during January through March and about 62 percent in the summer months. Although the operator and wife worked 52 percent more hours in July than in February, their proportion of total labor showed little change (table 1). However, there were significant changes in the hours worked by other family members--primarily youth who attend school during most of the year. They do about 13 percent of the work during the winter months, but their work load increases to 19 percent during June through August. Some of the other family workers who do not attend school, also increase their work load during the summer.

Farms that hired labor used almost double the hours of labor that were used on farms not hiring labor. Other than the difference in hours there were several other noticeable differences in labor practices associated with farms that used only family labor. Whereas operators on farms hiring labor supplied 28 to 32 percent of the labor--operators on farms using only family labor furnished nearly half of the labor all year. Whether farms hired labor or used only family labor, the wife provided a fairly constant proportion of the total labor, while the other family workers' hours increased about 38 percent during the peak months.

Even though farms not hiring labor used far fewer hours of labor each month than farms that hired labor, the percentage change in labor needs between February and July was much greater for non-hiring farms.

This first section of the report is primarily concerned with the seasonal labor input of the farm operator and his family on farms that hired labor. Throughout the section there are references to farms that used only family labor to show how their labor inputs are similar or different from that of farms that hired labor. Prior to detailed discussion

Table 1.--Percentage change in family hours worked from low to high month by size of farm, United States, 1966

Size of farm	All workers	Family workers			
		All	Operator	Wife	Other family
	Percent				
Large-scale					
Farms that hired 1/	41	52	38	26	109
Farms that used only family labor	53	53	43	31	120
Large					
Farms that hired 1/	56	66	54	42	127
Farms that used only family labor	66	66	50	44	131
Medium					
Farms that hired 1/	58	70	56	40	143
Farms that used only family labor	77	77	66	36	161
Small					
$10,000 to $19,999 in sales:					
Farms that hired	63	83	67	58	159
Farms that used only family labor	73	73	63	41	135
$5,000 to $9,999 in sales:					
Farms that hired	68	97	83	78	149
Farms that used only family labor	83	83	79	43	141
$2,500 to $4,999 in sales:					
Farms that hired	53	89	81	79	109
Farms that used only family labor	66	66	66	42	93
$50 to $2,499 in sales:					
Farms that hired	62	101	86	78	150
Farms that used only family labor	84	84	70	77	111

1/ All worker column includes family and hired labor.

of the affects of farm type and geographic region on seasonal labor patterns, some general comments about each size group of farms is in order.

The tremendous demand for labor inputs on large-scale farms often overshadows the role of operator and family labor on these farms. Operators and their families put in many hours of labor on every type of farm. The operator on farms using only family labor increased his family's work hours more during peak season than the farmer who hired labor.

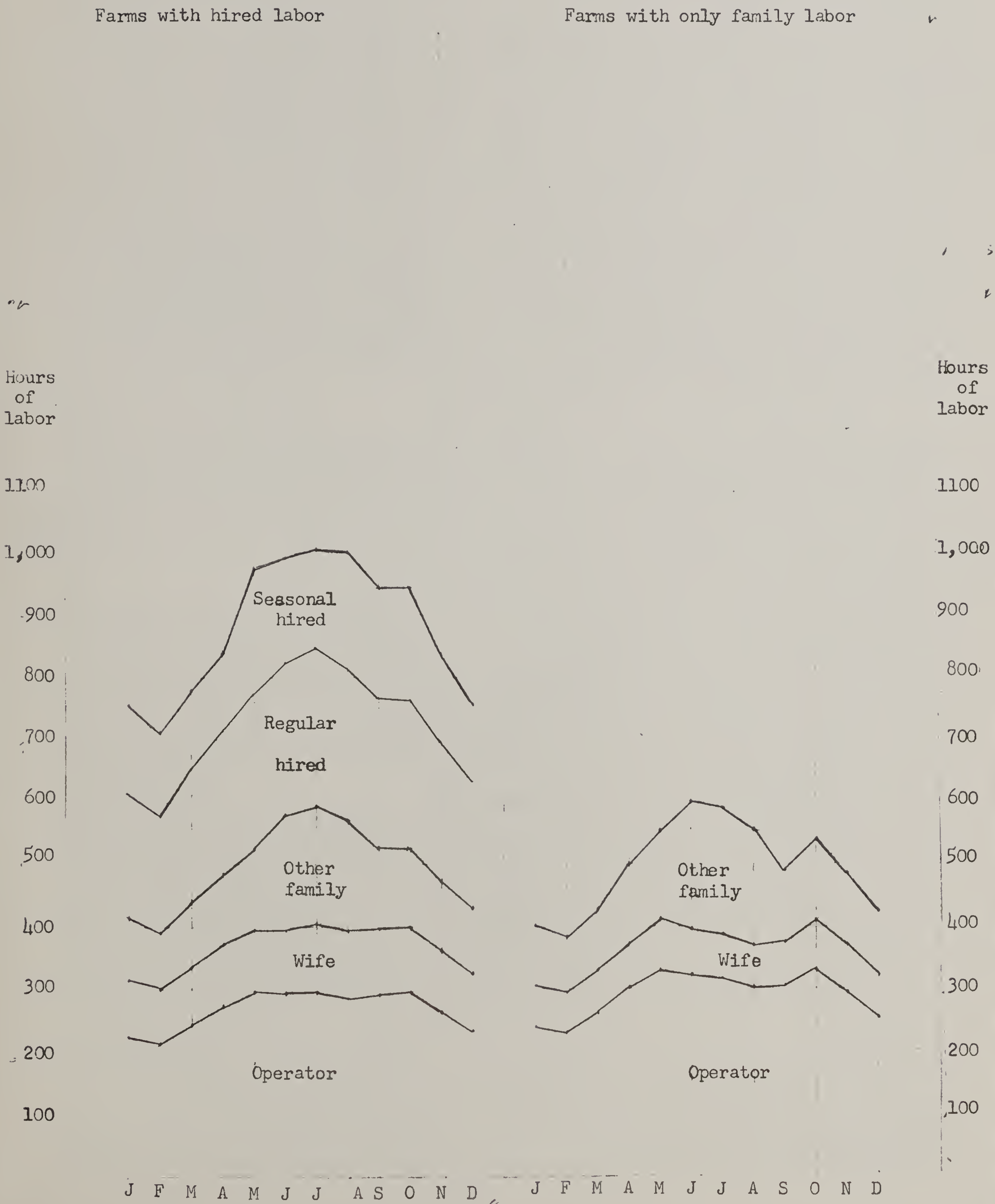
Large-scale farms that hired labor had considerably higher total labor needs than those farms that did not hire labor (figure 1). However, there was little difference in hours worked by the operator's family. The major difference was that the operator worked more hours every month on the farms that used only family labor. On farms that hired labor, the wife made up the difference for the fewer hours worked by the operator.

The average large size farm that hired labor used over 9,500 hours of family and hired labor during the year (figure 2). This was about a thousand hours less than large-scale farms but some 300 hours more than medium size farms. Similar to the other farm sizes the operator and his family had significant seasonal changes in their monthly work load.

The average medium size farm that hired labor used 9,185 hours of total labor during 1966. Even though slightly more hours of family labor was used on non-hiring farms, these farms used fewer hours of total labor then hiring farms (figure 3). The low month of labor activity on medium size farms was in February, with the amount of labor used in July 50 percent greater.

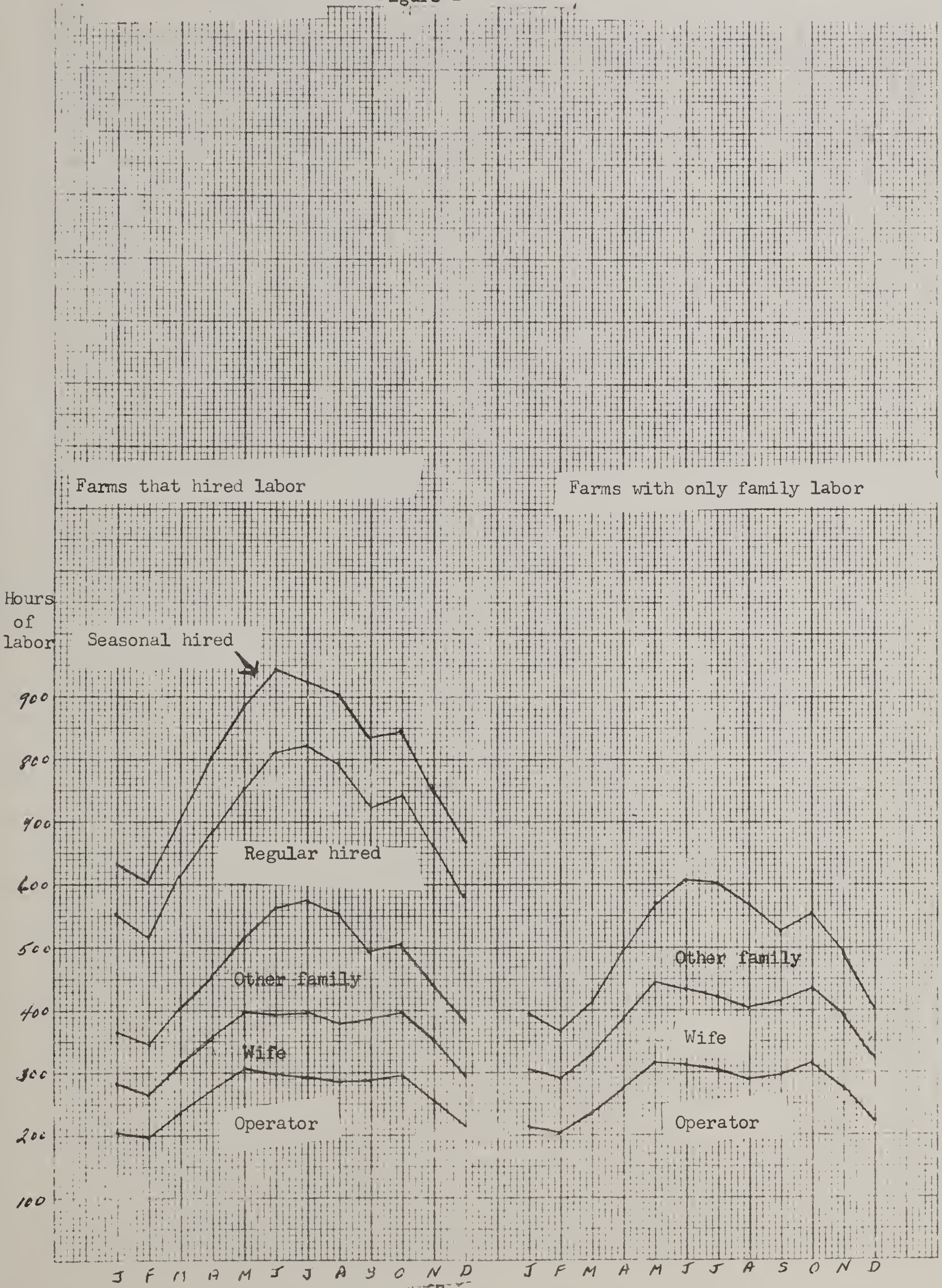
Monthly hours of labor on large-scale farms, United States, 1966

Figure 1



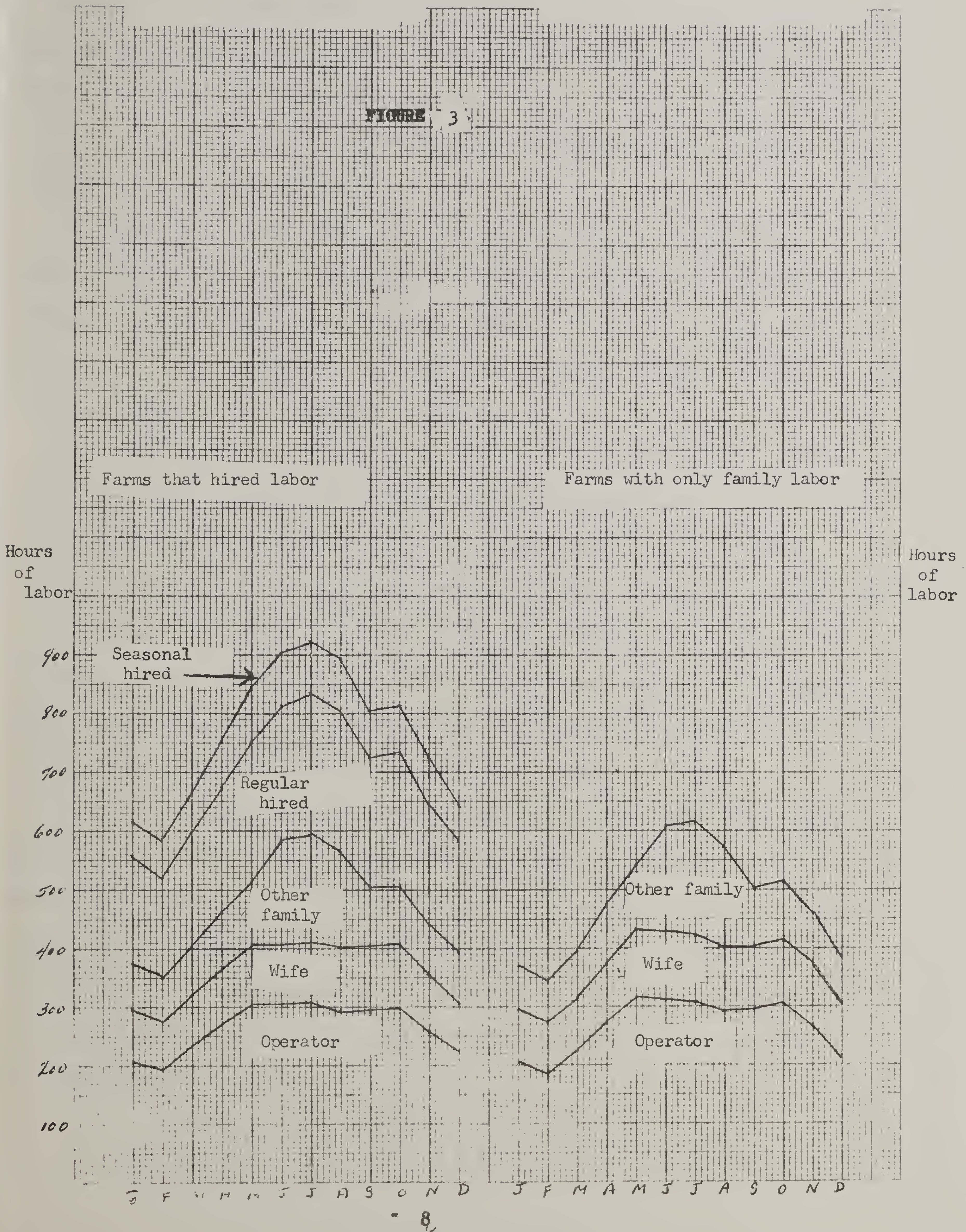
Monthly hours of labor on large farms, United States, 1966

Figure 2



Monthly hours of labor on medium size farms, United States, 1966

FIGURE 3



Similar to the large-scale farms discussed earlier the proportionate share of labor done by the farmer and his wife on medium size farms remained fairly stable throughout the year. This, of course, indicates that their absolute hours of labor increased at a rate similar to the increase in total hours per farm.

On medium size farms that hired labor, the operator and his wife worked slightly more hours than similar persons on large farms. This was particularly true during months of peak activity. However, on farms that did not hire labor, the family on large farms put in more hours of labor than the family workers on medium size farms.

The only significant proportionate seasonal change in hours worked was that of the other unpaid family workers. They increased their hours of labor as well as their share of the total labor input. They worked more than twice as many hours in the peak summer months as they did during February (Fig. 3).

On medium size farms that hired labor, other unpaid family workers contributed almost as many hours of work as their counterpart on the large-scale farms. Even then, the major difference in average monthly hours worked occurred during the winter rather than the peak summer period.

In any comparison of labor needs on farms that hired labor with farms that used only family labor, we should be cognizant of an important difference. Medium size farms that used only family labor were similar to large and large-scale farms in that they too were much smaller in terms of acreage than farms that hired labor. Medium size farms that hired no labor were just over half the size in total acreage with about 83 percent as much cultivated acreage as farms that hired labor.

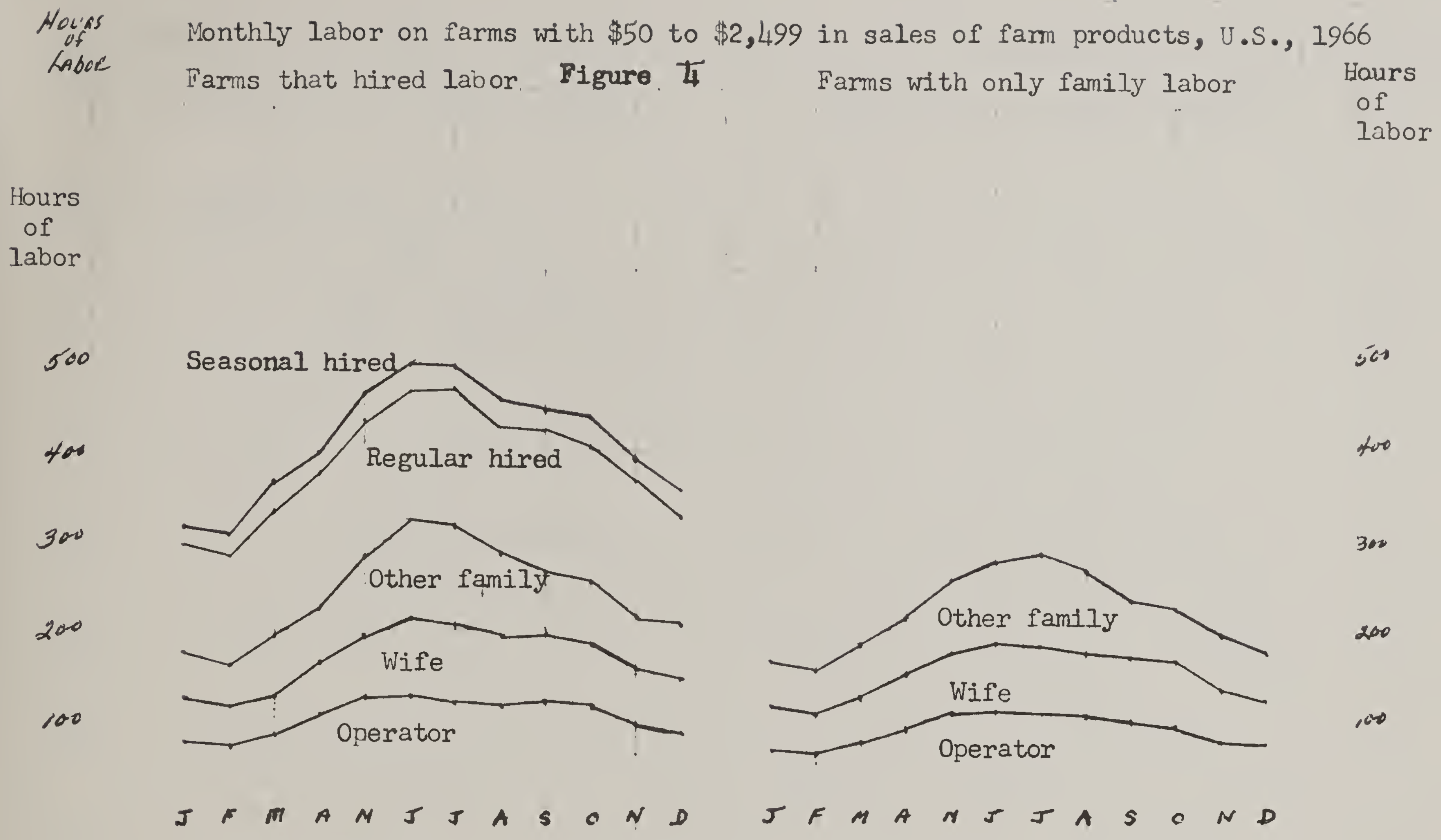
The group of farms classed as small farms in this report is comprised of four of the smaller economic size groups as delineated by the United States Census Bureau. Among these 4 sizes of farms there are some slight differences in the proportion of total labor done by the various members of the family. However, the proportion of total man-hours worked by the entire family is only one percentage point different between farmers selling less than $2,500 and those with sales of $19,999 (figures 4 and 5). In terms of actual hours the larger the farm, the more hours worked during the year by each member of the farm family.

On the smaller farms that hired labor, operators worked only 70 some hours a month during the slack season, and never exceeded 132 hours during any month of the year. In comparison farm operators with sales of $10,000 to $19,999 averaged 175 hours during February and increased their work load to about 290 hours during peak season.

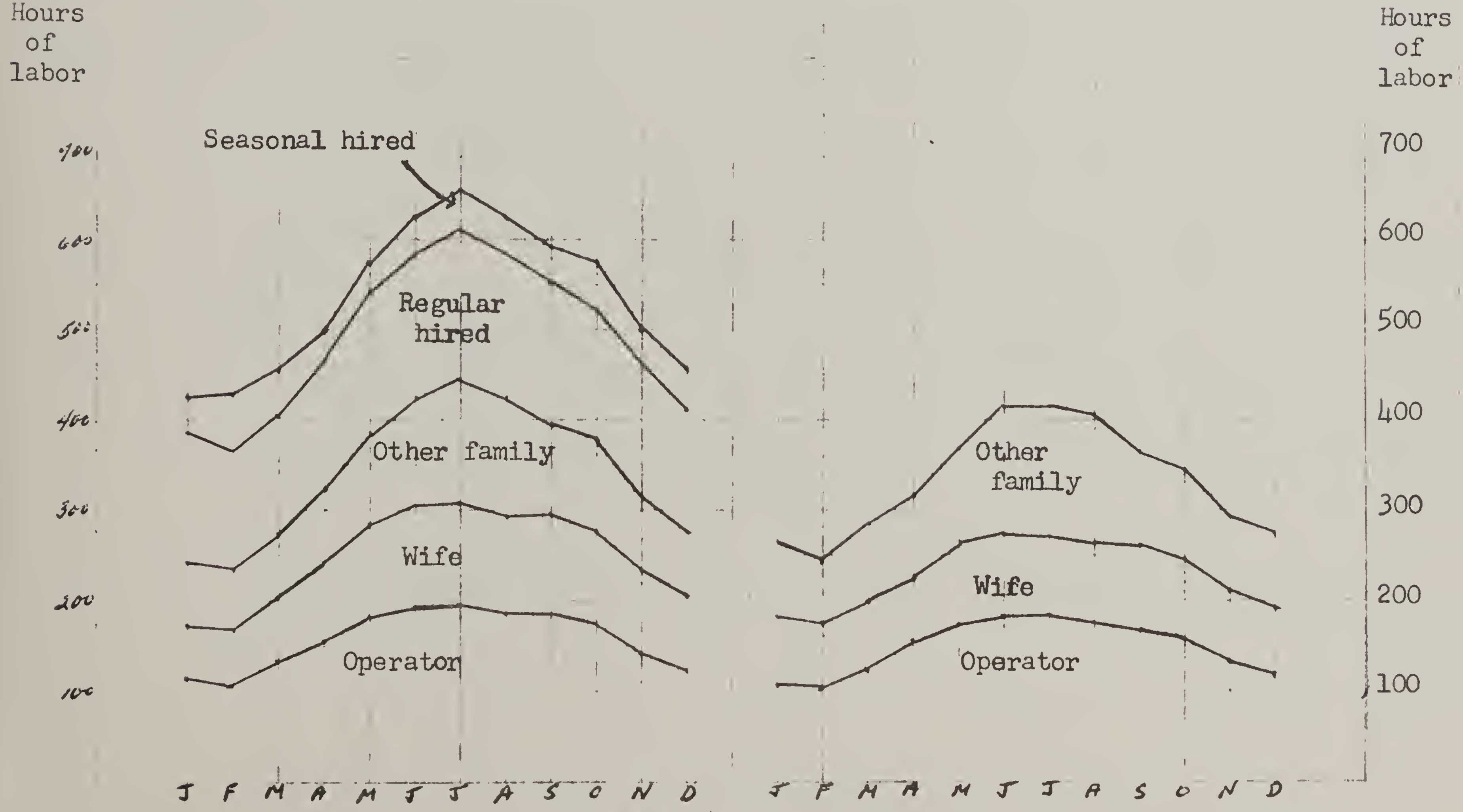
The wife on small farms did some farmwork all year long. Even so, she never worked as many hours during the peak season (June-August) as the other unpaid family members. On the smallest farms she worked only about 40 to 50 hours a month during slack season, but contributed about 80 hours a month during the summer. On farms which had sales from $10,000 to $19,999, the wife worked 80 to 90 hours during the winter months and increased her monthly work load by a third or more during the summer peak.

Monthly labor on farms with $50 to $2,499 in sales of farm products, U.S., 1966

Figure 4

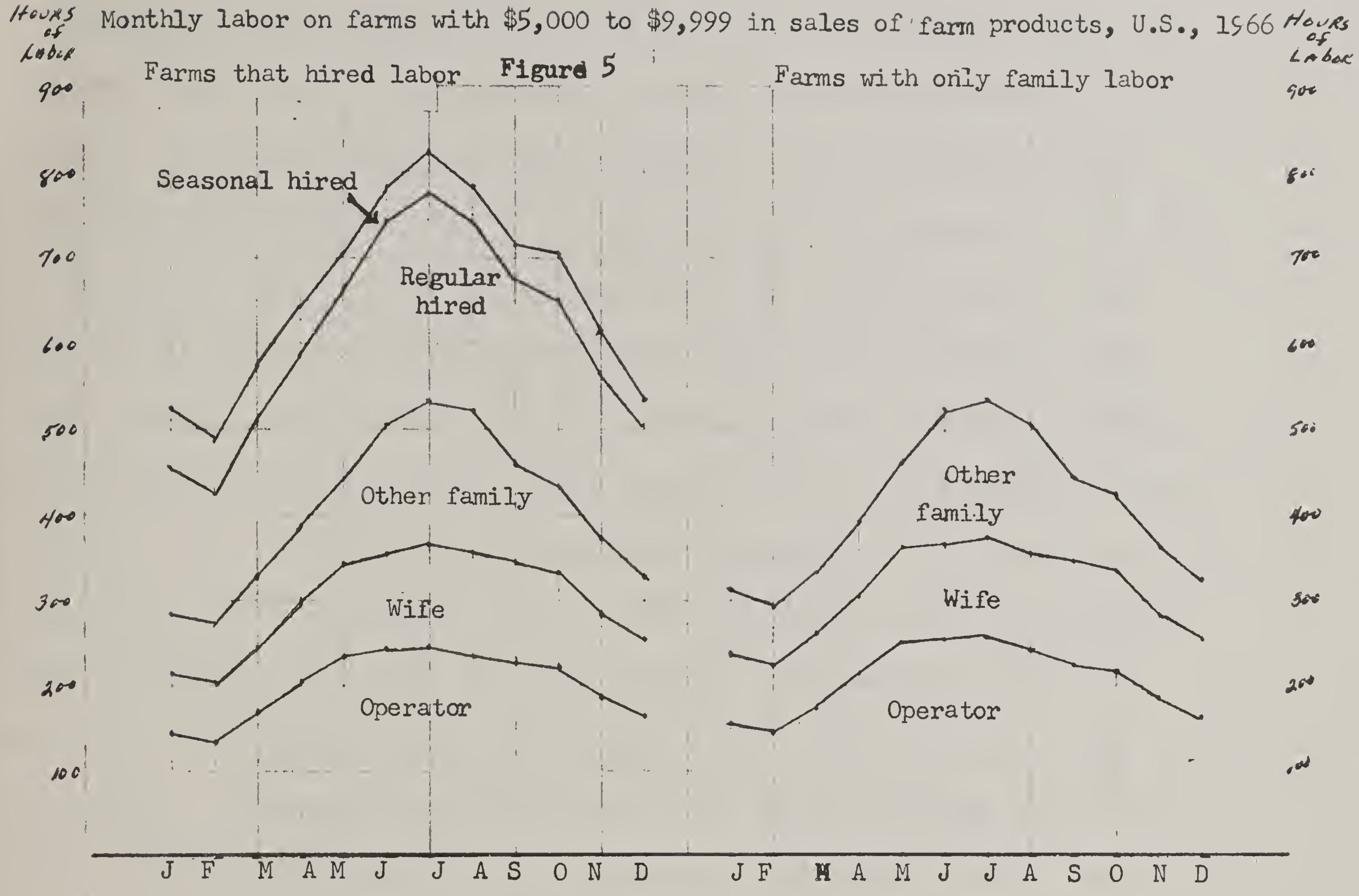


Monthly labor on farms with $2,500 to $4,999 in sales of farm products, U.S., 1966

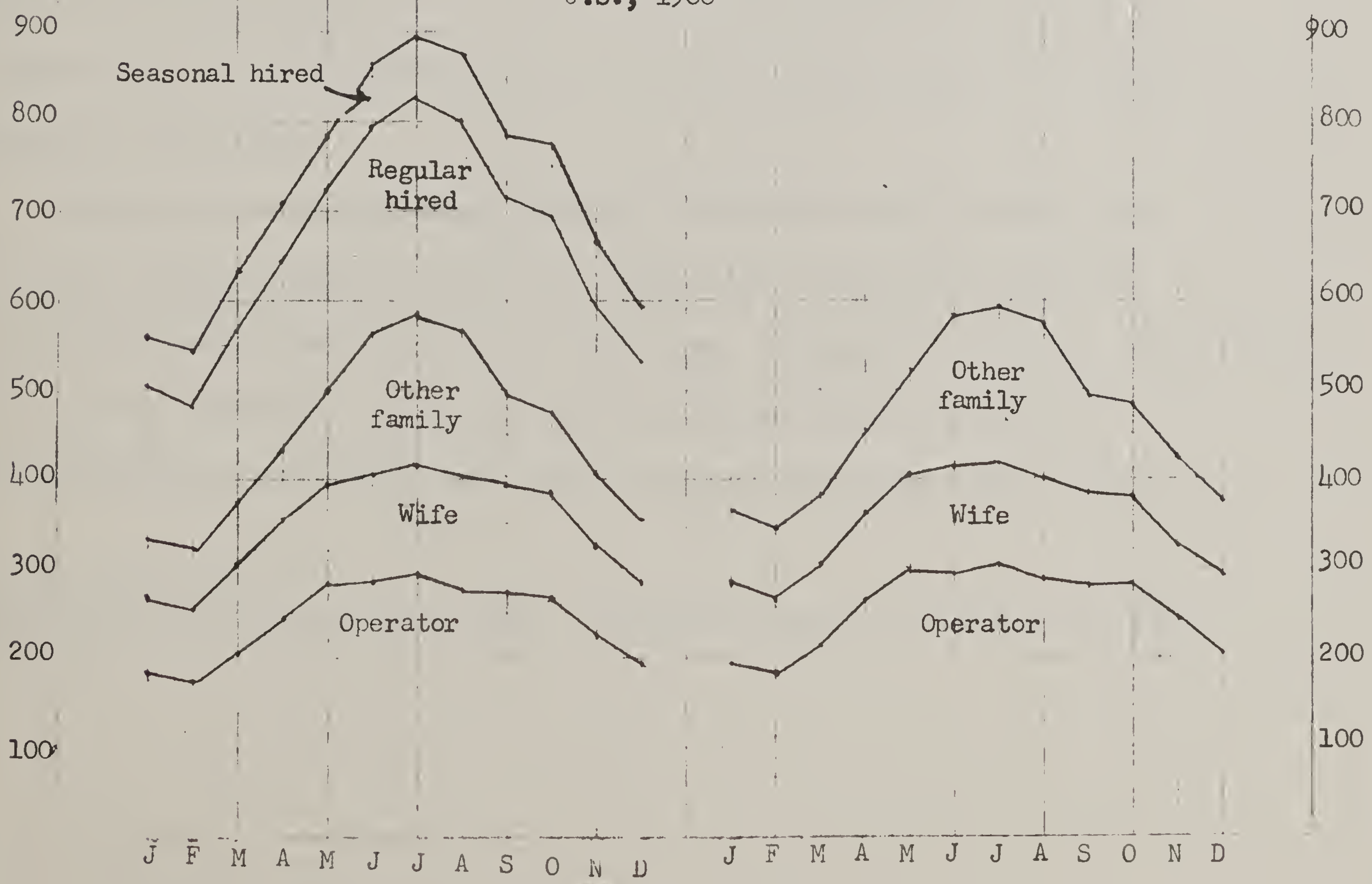


Monthly labor on farms with $5,000 to $9,999 in sales of farm products, U.S., 1966

Figure 5



Monthly labor on farms with $10,000 to $19,999 in sales of farm products, U.S., 1966



On small farms, particularly those with less than $10,000 sales, the operator would find it quite difficult to live from the realized net farm income. In the Farm Income Situation Report, it was estimated that for farms grossing $5,000 to $9,999, realized net income averaged about $1,810 and $1,481 for farms grossing less than $5,000 in 1966.[3] This and the labor data in the 1966 Pesticide and General Farm Survey supports other recent studies that suggests that the operators of small farms are doing more off-farm, or nonfarm work. This appears to be what happened on farms in this report, for there was a significant decrease in the proportion of labor done by the operator as size of farms declined. On the farms with sales of $10,000 to $19,999 that hired labor, operators contributed 34 percent of the labor; but only 26 percent on the farms with sales less than $2,500. Conversely, labor input by other family workers (including wives) went from 29 percent up to 35 percent. This trend was even more pronounced on farms that used only family labor. For instance on farms with $10,000 to $19,999 sales, the operators furnished 55 percent, but on the farms with sales of $50 to $2,499 the operator was the source for only 40 percent of the labor.

Similar to the large farms ($40,000 to $99,999 sales), farms with less than $20,000 sales who used only family labor had less total and cultivated acreage than farms that hired labor. Farms with $2,500 to $4,999 sales was the only exception with a few more cultivated acres, primarily in hay and grain which uses less labor per acre than many other crops.

3/Farm Income Situation, July 1969. Economic Research Service, U.S. Dept. of Agric.

Twenty-nine percent of the farms with sales of $10,000 to $19,999 and over half of the smallest farms used no hired labor at any time during the year. Even so, there was little or no difference in total family labor input within any size farm group with less than $20,000 sales, whether they hired labor or not (figures 4 and 5).

Farm size and hiring practices seem to have little, if any, effect on peak season of work. The most motivating factors were farm type within region. Peak season as well as sources of labor changed considerably with these two variables just as it did for medium and large-scale farming operations.

The smaller farms with less than $5,000 sales seemed to have about the same labor use patterns as the large-scale farms. The family put in more hours on farms that hired some labor. But, the in-between groups, farms with from $5,000 to $99,999 sales used more family labor on non-hiring farms than farms that hired labor. This large middle group preferred to substitute hired labor for family labor when possible, whereas the smallest and the largest farms that hired labor, used more family and total labor than non-hiring farms. The smallest farms relied mostly on seasonal hired labor to do any work that the family could not do. But, regular hired workers provided the principle source of labor for the large-scale farms although they too used considerable seasonal help--both paid and unpaid.

Effect of Farm Type

Large-scale Farms ($100,000 or More Sales)

On the large-scale farms that hired labor, type of farm was a major factor in seasonality of family labor.

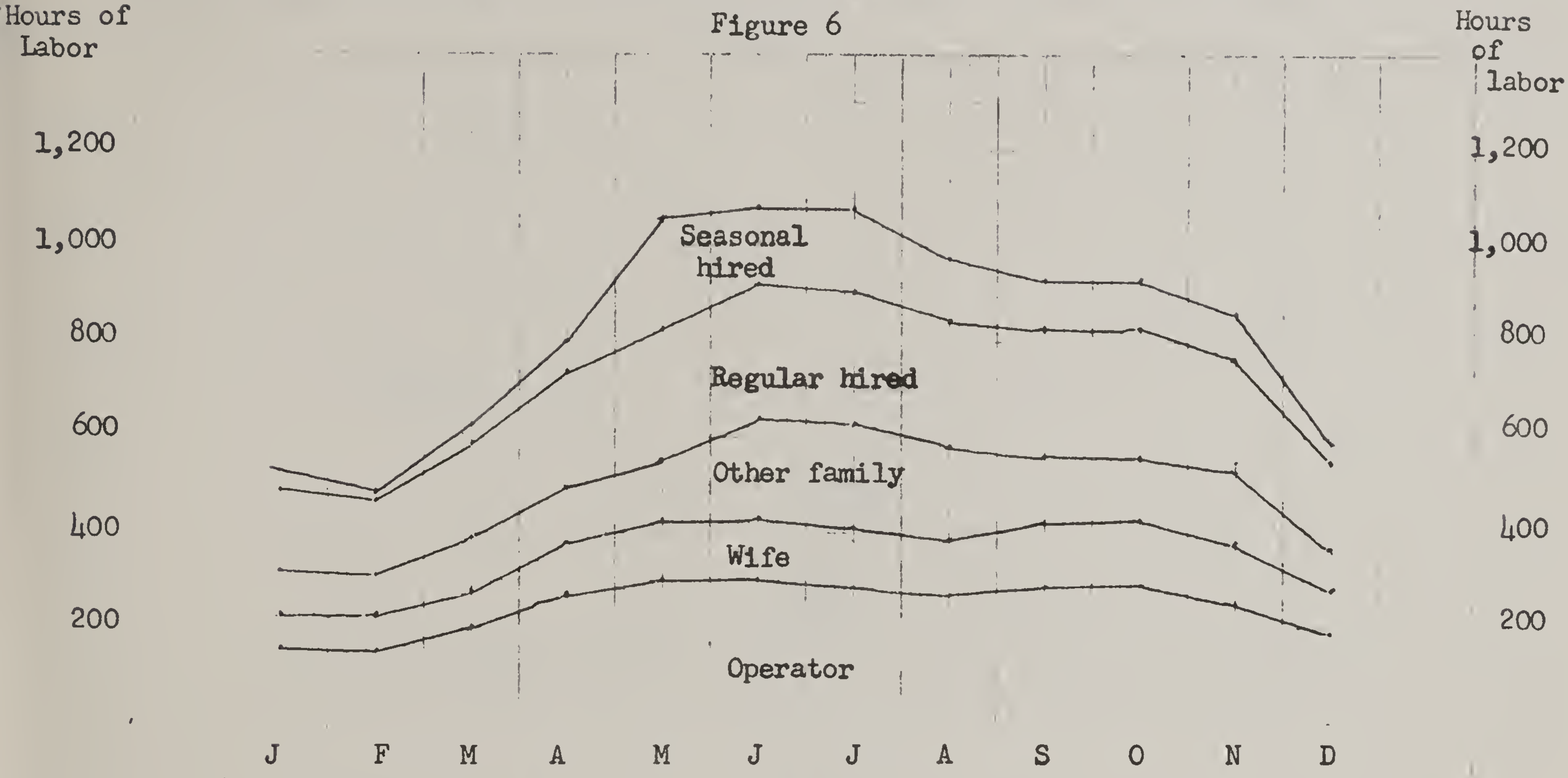
The operator generally did more of the work than his wife or other family members.

The hours of work per farm for all workers was about 41 percent greater during July than it was in February. This gearing up for the peak season varied widely among the farm types. There was less effort on the part of dairy farmers as they used about the same amount of hired, operator and wife's labor all year. However, other family members more than doubled their work load on dairy farms during July. Labor on poultry farms also showed only slight increases compared to labor on vegetable and cash grain farms (figs. 6 and 7). Increases in hours worked by operators from low to peak labor months was greatest on cash grain farms and quite high on other field crop and vegetable farms. On all three types of farms, operators were busy most months of the year, but had to expand their contribution even more during peak season.

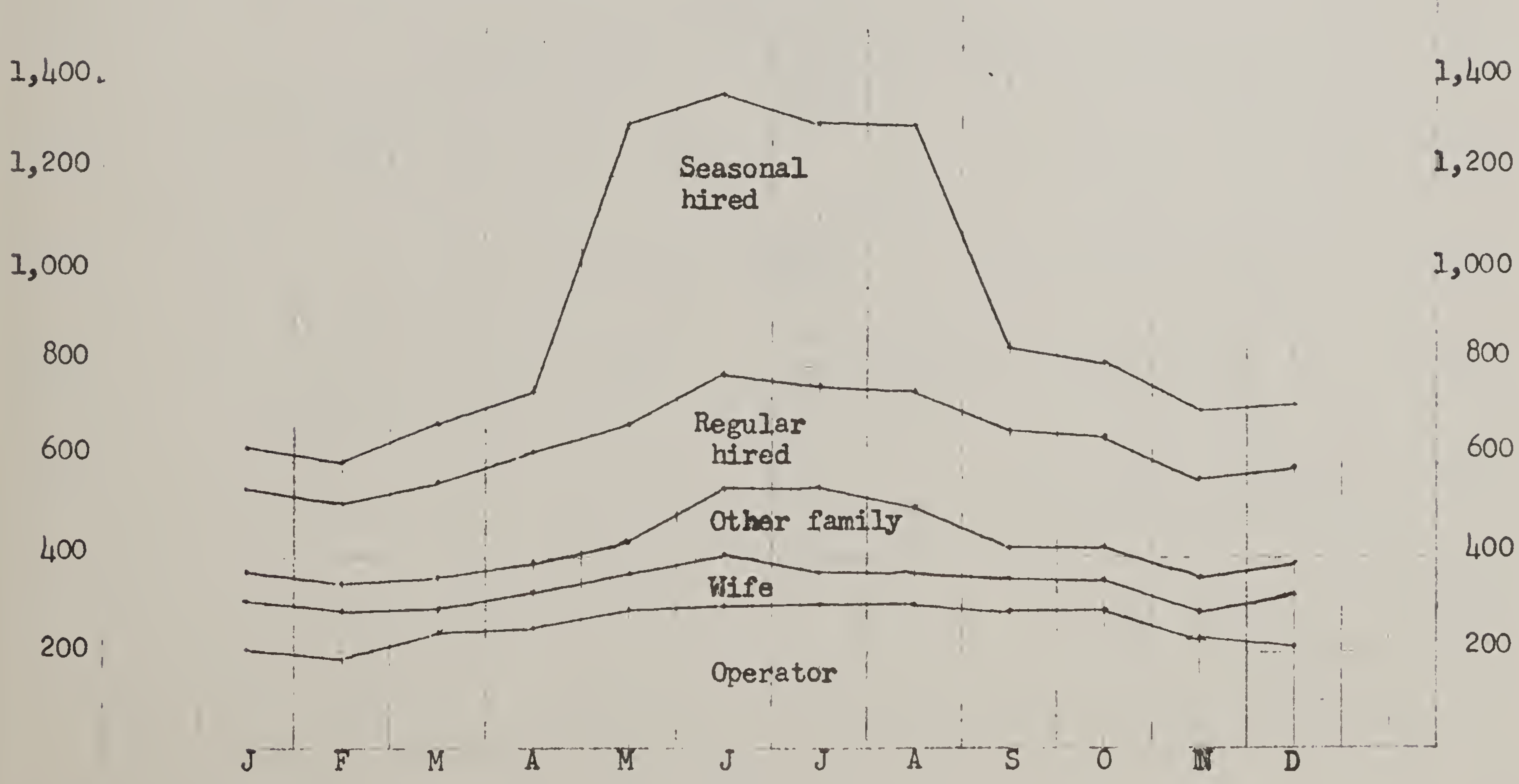
Vegetable acreage on most farms in this study was in beans, tomatoes, and sweet corn. The tremendous increase in man-hours on vegetable farms was primarily in the use of hired seasonal and unpaid other family members. The vegetable farm operator, his wife and regular hired help all increased their work load but not half as much as did seasonal hired workers.

Monthly hours of labor on large-scale cash grain farms that hired labor, U.S., 1966

Figure 6

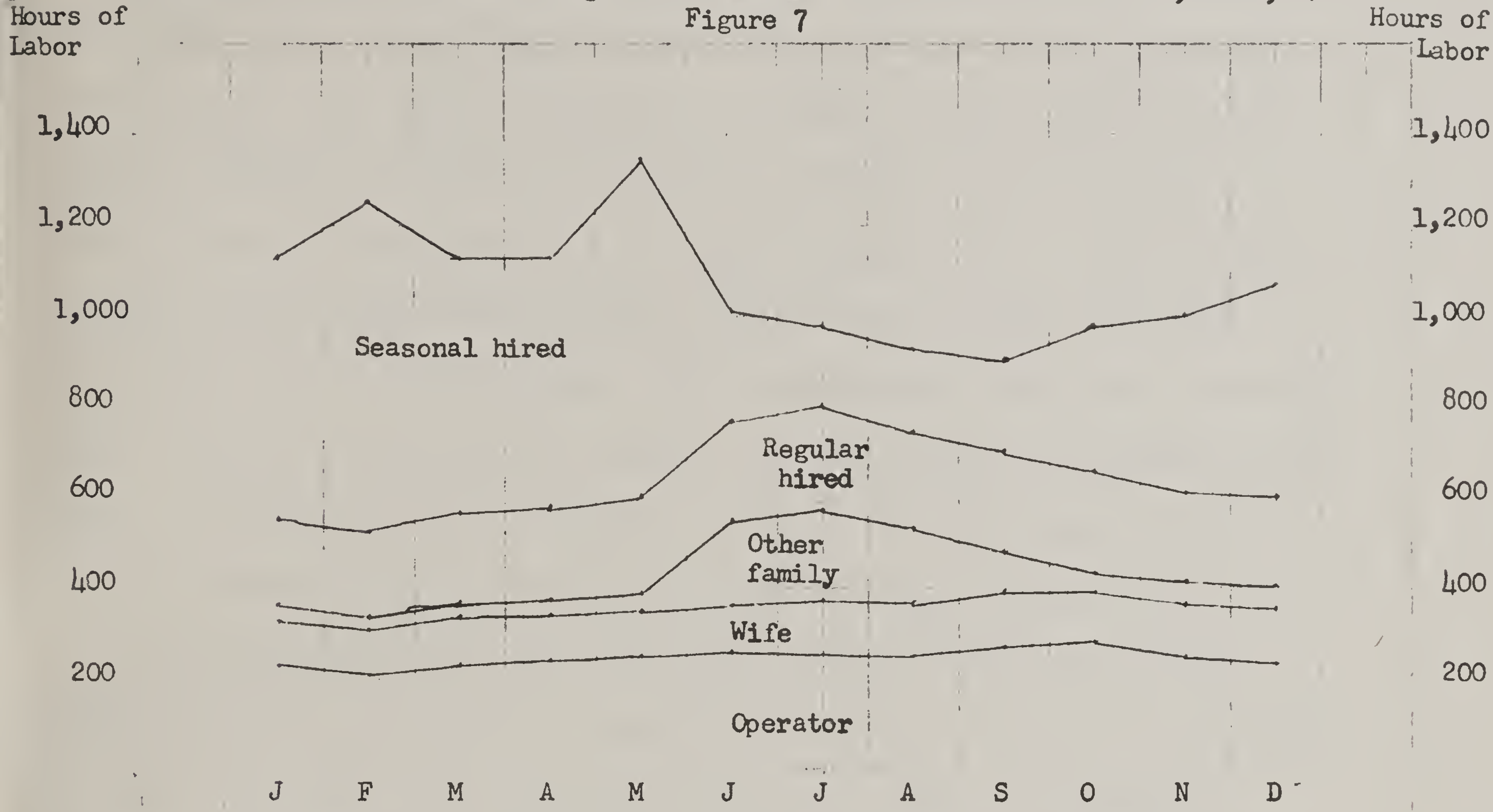


Monthly hours of labor on large-scale vegetable farms that hired labor, United States, 1966

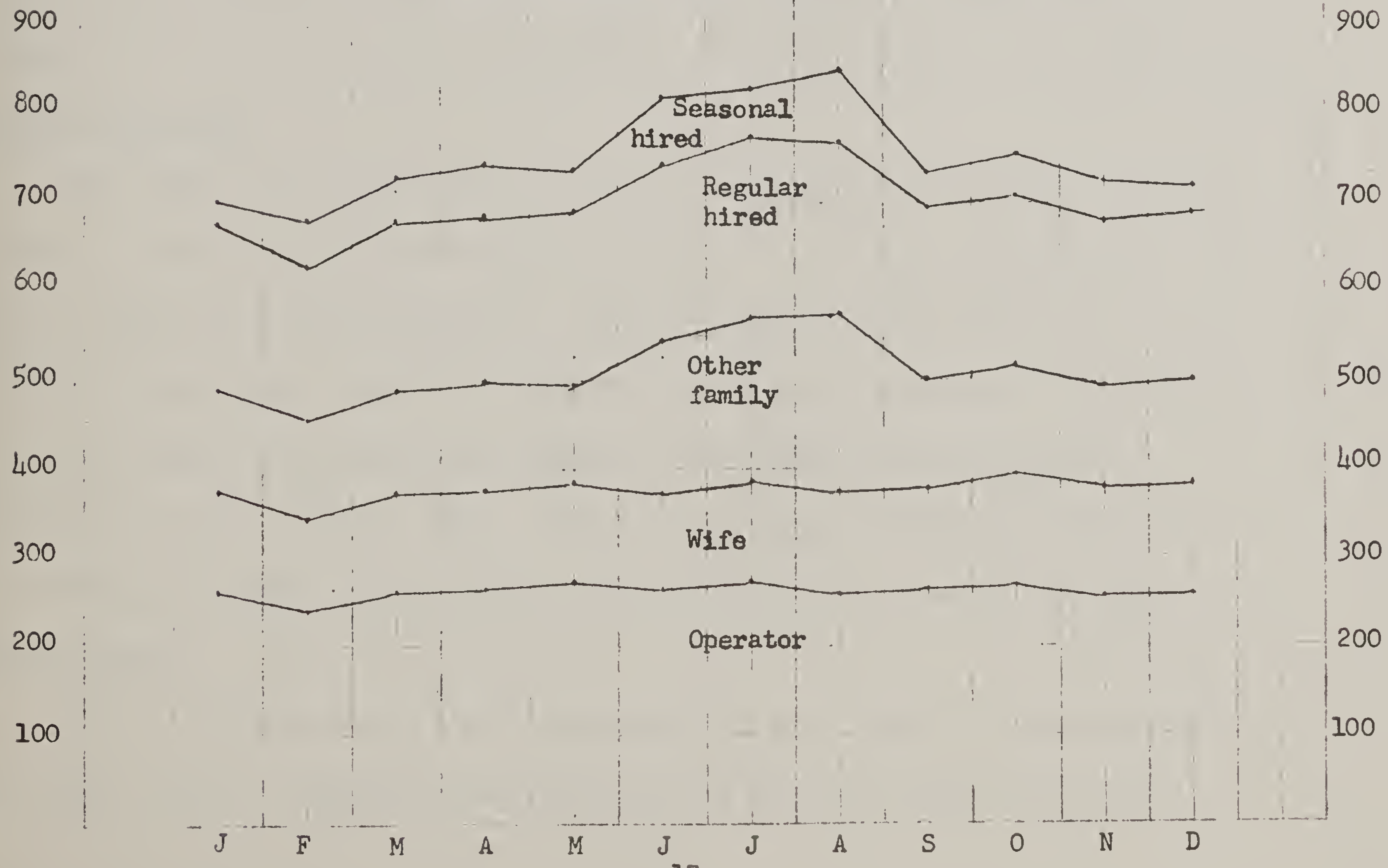


Monthly hours of labor on large-scale fruit farms that hired labor, U.S., 1966

Figure 7



Monthly hours of labor on large-scale poultry farms that hired labor, United States, 1966



Although fruit and nut farms used more labor during the year than any other farm type, the operator, his wife and regular hired help increased their monthly hours during peak season less than a third over the slack month. The major proportion of the labor increase during peak season on fruit farms, was attributable to seasonal hired and "other unpaid" family workers in the Pacific and Southeast. There were no large-scale fruit farms that used only family labor. The exceptionally heavy use of seasonal labor during the winter months reflects the labor used on Southeast citrus farms. The moderate peaks shown for operator, wife and regular hired--July to October--reflects the work in peach and apple orchards (fig. 7).

A major proportion of the large-scale farming operations studied that did not hire labor, were other livestock farms. Earlier it was noted on farms using only family labor that there was a greater percentage increase in work hours than on farms hiring labor. However, this occurred only on other livestock farms. Much of the increase in total labor on farms hiring was supplied by hired help. Also the increase in family labor on these farms was greater than the increase in family labor on farms not hiring.

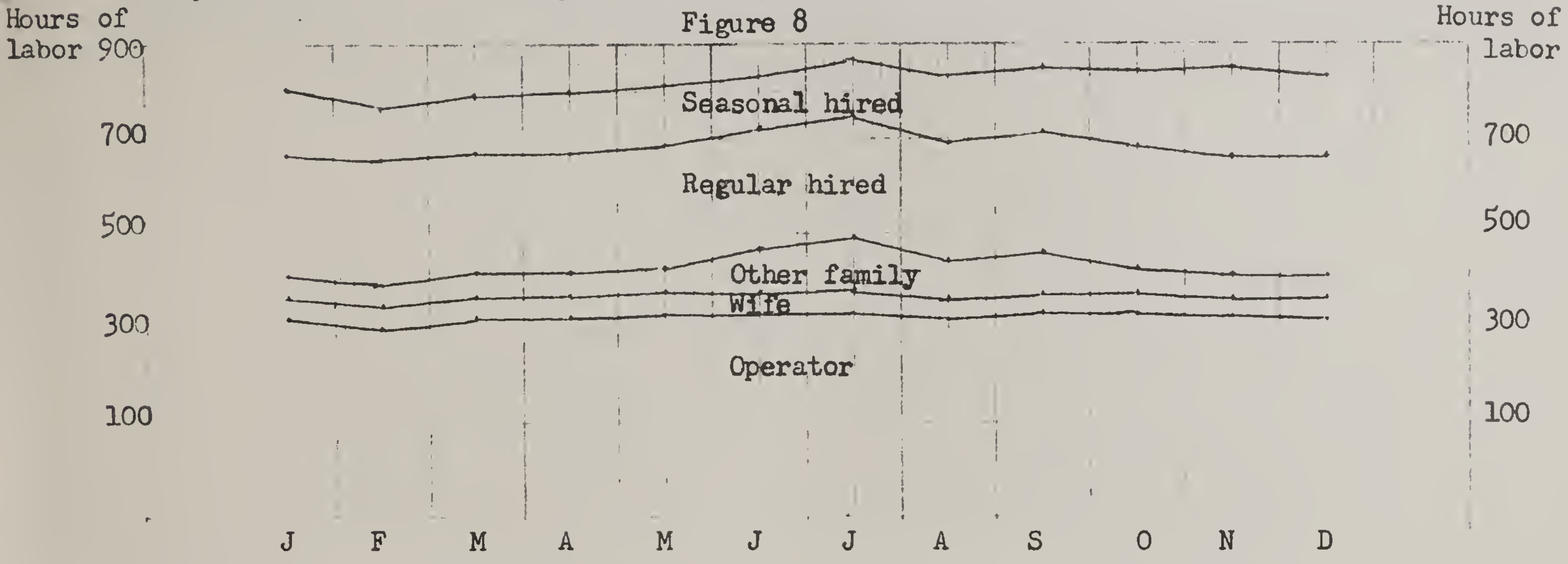
Peak Work Months

For farms that hired labor, the peak work month also differs by farm type and kind of worker on large-scale farms. Peak month of operator labor ranges from May to October. May is peak work month for other livestock operators (fig. 8). These livestock farms produced considerable beef and grain, both enterprises which demand much of the operator's attention at that time of year. The next earliest peak labor month was on cash grain farms. These farms required more of the operator's time during June.

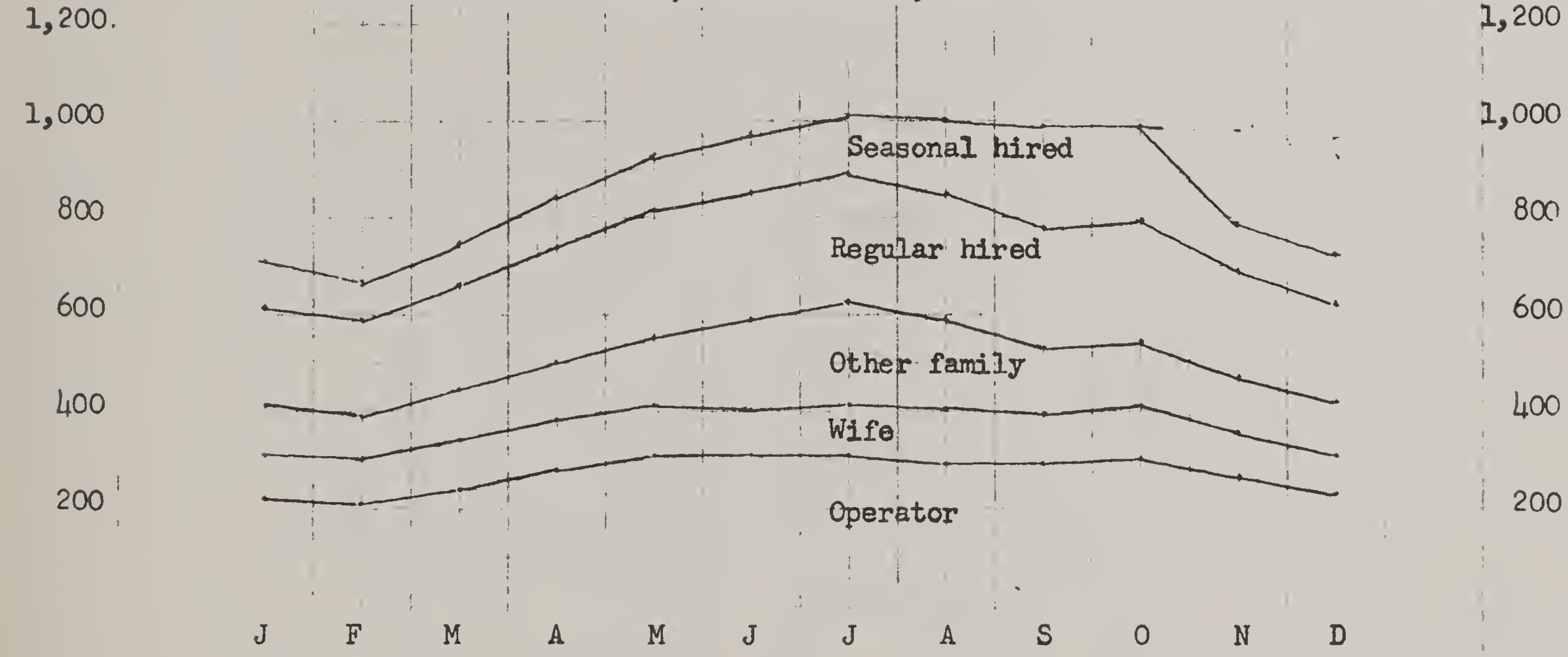
In this study most of the fruit farms had more acres of apples then any other fruit. Apples are harvested in the fall and thus more of the

Monthly hours of labor on large-scale dairy farms that hired labor, United States, 1966

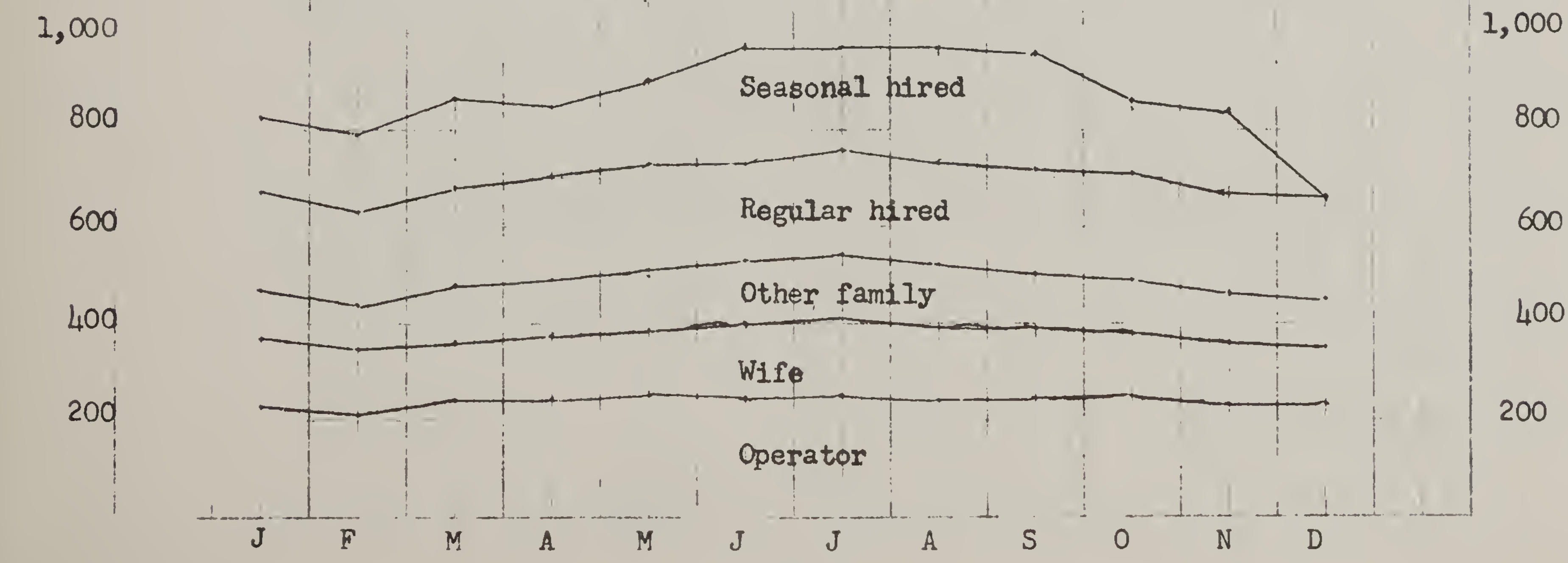
Figure 8



Monthly hours of labor on large-scale other livestock farms that hired labor, United States, 1966

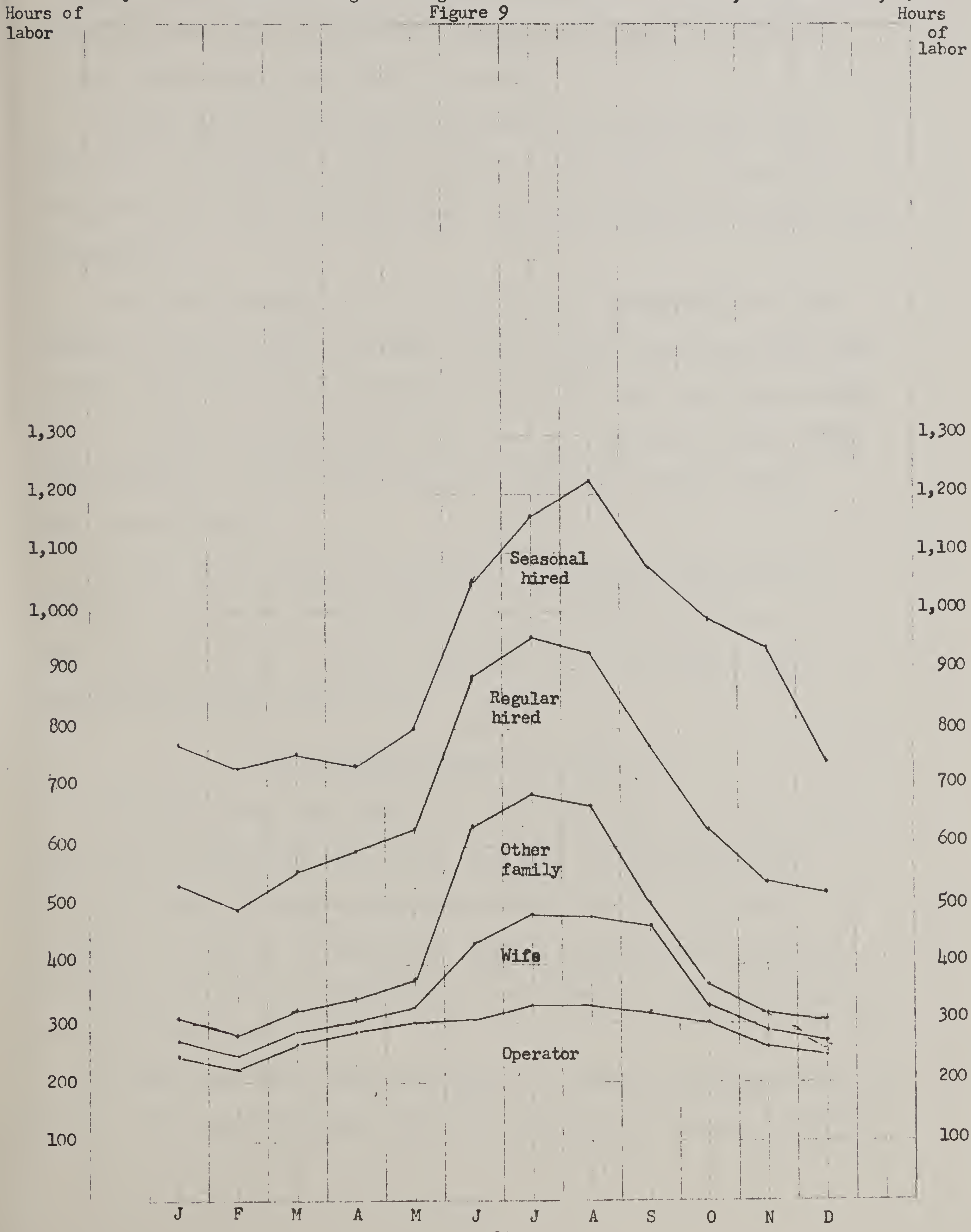


Monthly hours of labor on large-scale livestock ranches that hired labor, United States, 1966



Monthly hours of labor on large-scale general farms that hired labor, United States, 1966

Figure 9



operator's time is used during September and October. However, in the Southeast where citrus is harvested in winter and spring, fruit growers in that region worked more during the spring.

The peak month for the operator's wife was seldom the same as the operator's. For example, poultry operators' peak month was July; their wives December. Wives on cotton farms worked more during May; the operators in October.

Other family members on 7 out of 10 types of farms worked more hours during July than in any other month. Those on cash grain farms worked most in June during small grain harvest; those on other field crop farms worked most in December, coinciding with sugar beet and sugarcane harvest. Other family members on cotton farms worked the same amount of time during May, July and October.

On farms that used only family labor, the wife and other family's peak month of work was earlier than occurred for family workers on farms that hired labor. Most farm operators' peak work month was the same whether he hired labor or not.

Large Farms ($40,000 to $99,999 Sales)

Earlier we noted that large-scale farms using only family labor used fewer hours of total and family labor than that used on similar farms that hired labor. This was only partially true for farms with sales of $40,000 to $99,999. Although more hours of labor were used on farms that hired, the family contributed fewer hours then the family on farms not hiring labor (figure 2).

On large size farms, those not hiring labor tended to have somewhat greater total farm acreage then farms that hired labor. However, cultivated

acreage for these farms was only about two-thirds that of farms hiring labor. Too, nearly 76 percent of all land was pasture on farms not hiring labor. The larger number of family hours on farms not hiring labor may be partially due to the large proportion (50 percent) of dairy and other livestock farms in this sales group. These types of farms use much more family labor then other types. However, there were no large size tobacco farms that used only family labor.

The non-hiring farms that used exceptionally high amounts of family labor were cash grain, dairy and other livestock farms (figs. 10 and 12).

On large farms that hired labor, the operator's family supplied over half of the labor during every month of the year. Between low and peak months, labor needs increased on every type of farm. The increase in total hours ranged from 31 percent on dairy farms, to more then double on cash grain, tobacco, and vegetable farms. Because they have a heavy work schedule all year, dairy and poultry farm operators had less seasonal changes in their monthly work load then any other operators (figs. 10-13). Operators of most crop farms had sharp changes in their monthly work load between slack and peak season. Still they worked fewer hours then the dairy operators.

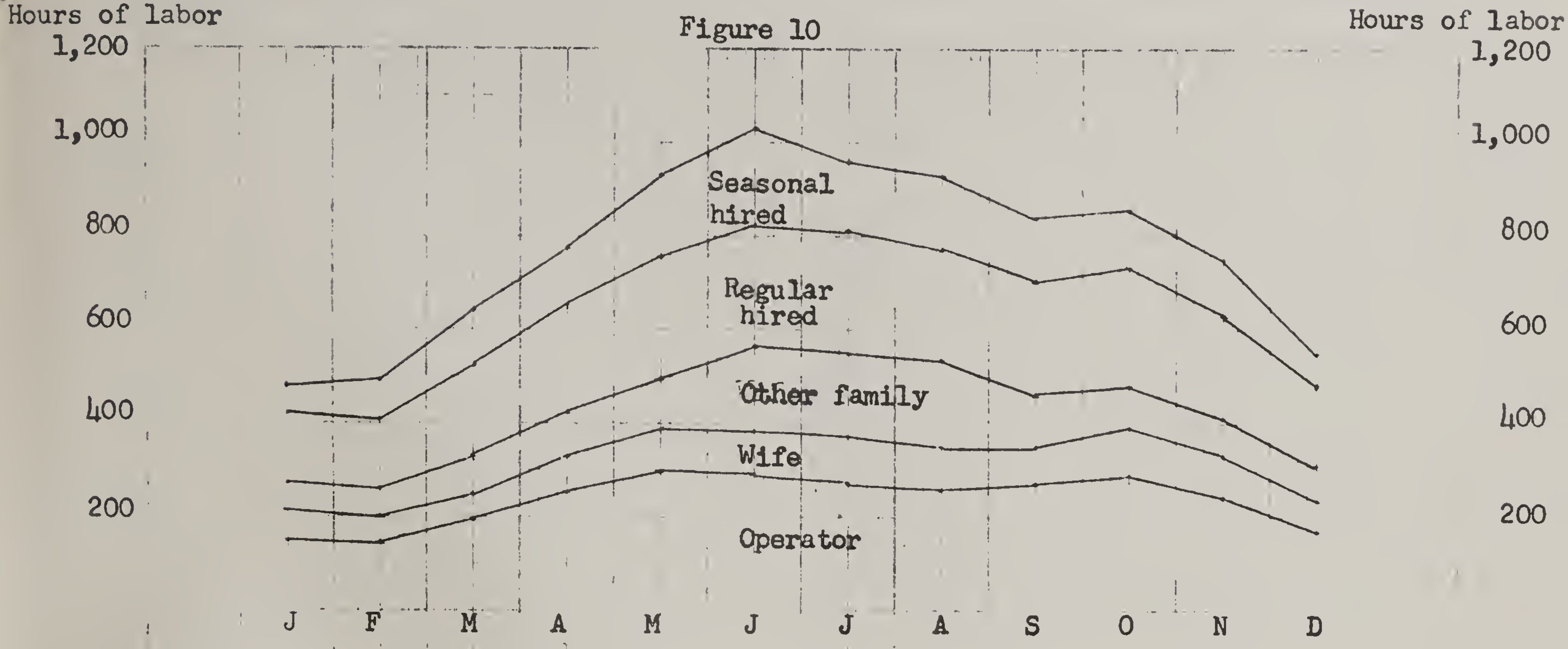
On most types of farms the wife and other family members do very little work during the winter, so their work load increases more percentage-wise in the peak season then does most operators.

Peak Month

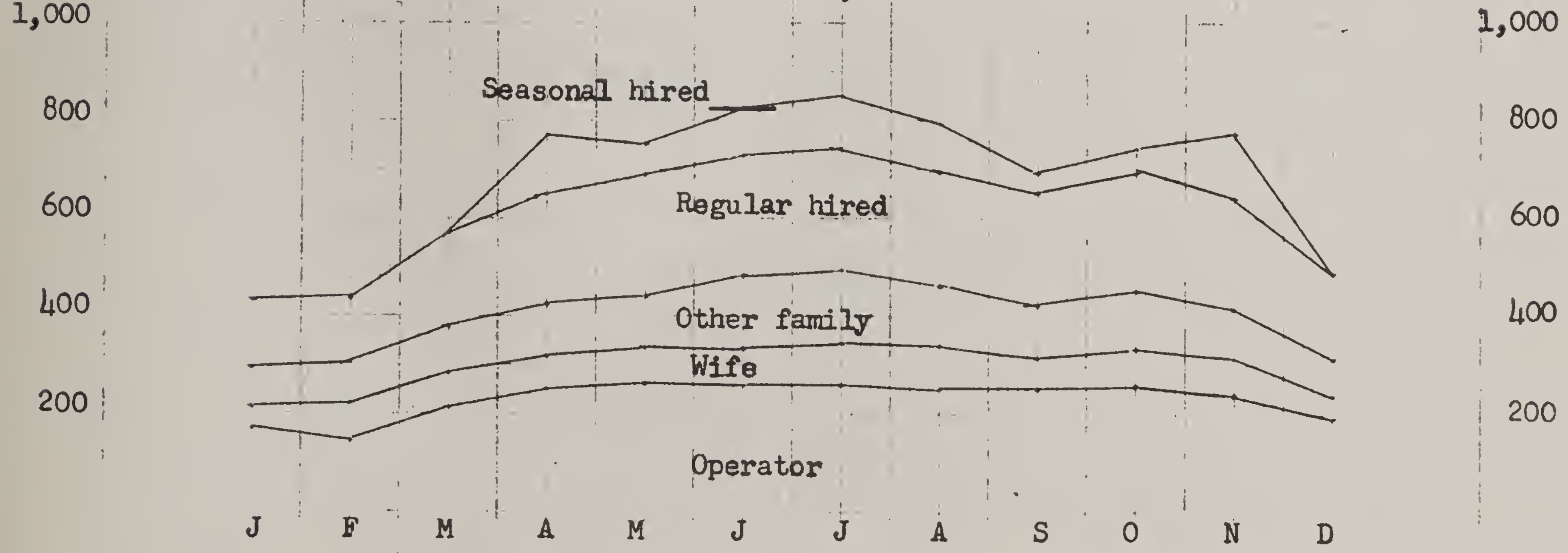
Large farms that used only family labor used more operator labor in May the same peak month for operators on farms that hired labor. This was the same peak month for large-scale farm operators. The wife on large farms had a much later peak month then wives on large-scale farms--October as contrasted with July. Other family members in both sales classes on farms

Monthly hours of labor on large cash grain farms that hired labor, United States, 1966

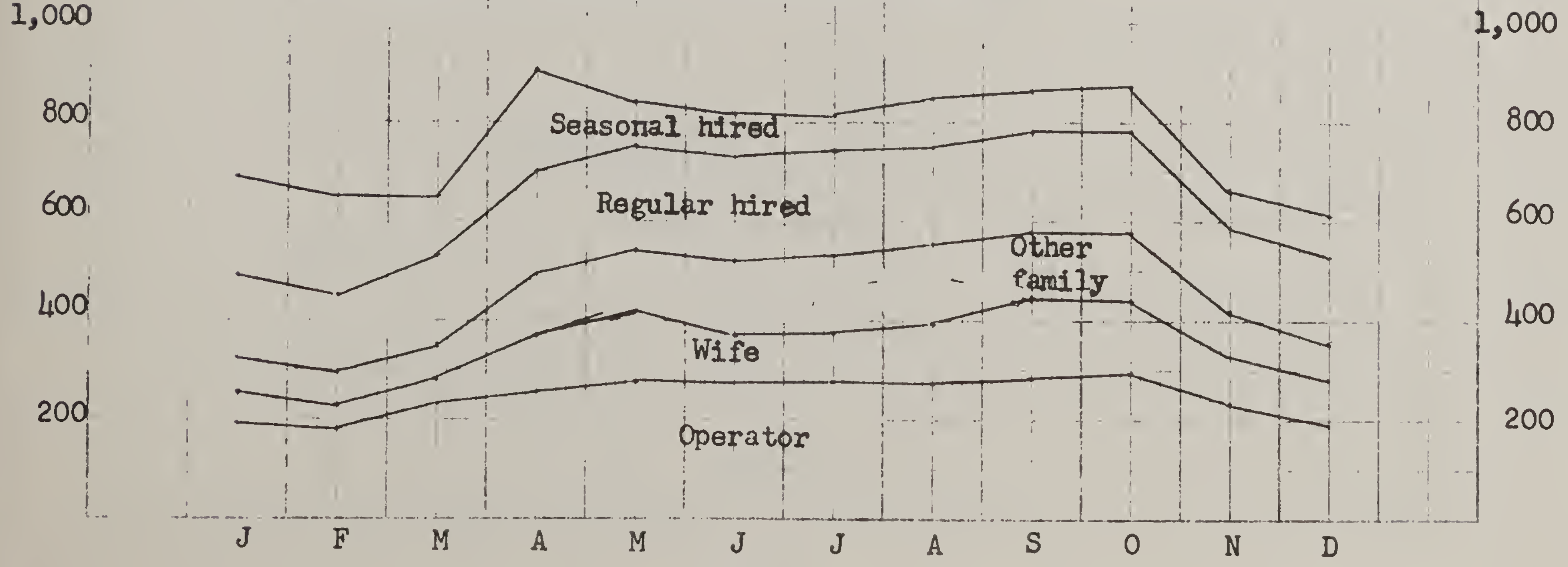
Figure 10



Monthly hours of labor on large cotton farms that hired labor United States, 1966

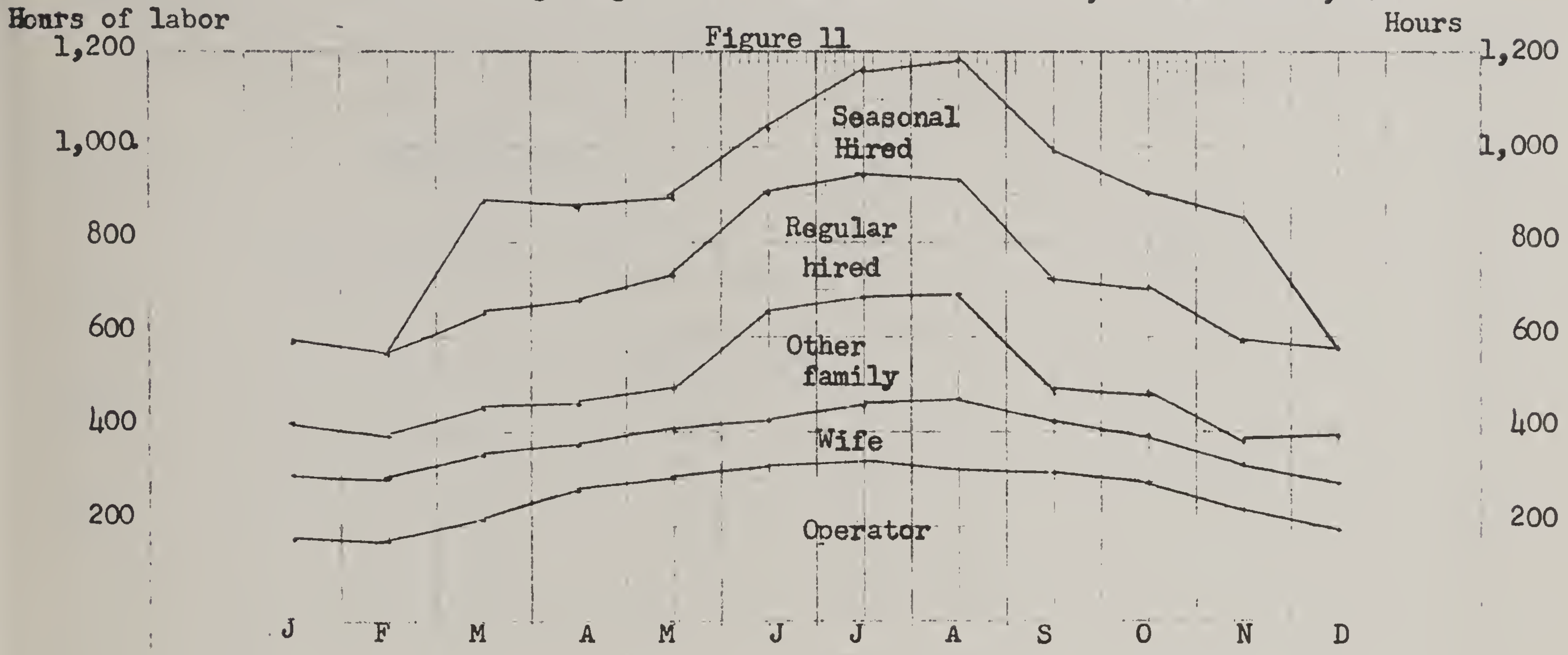


Monthly hours of labor on large other field crop farms that hired labor, United States, 1966

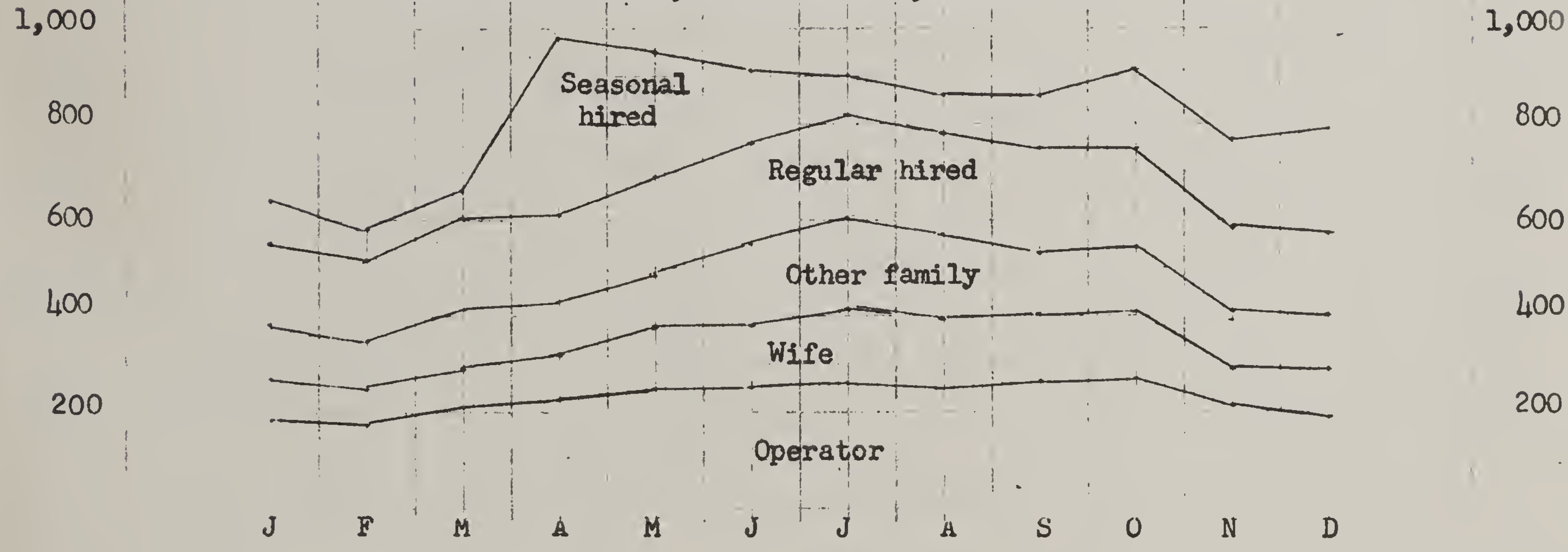


Monthly hours of labor on large vegetable farms that hired labor, United States, 1966

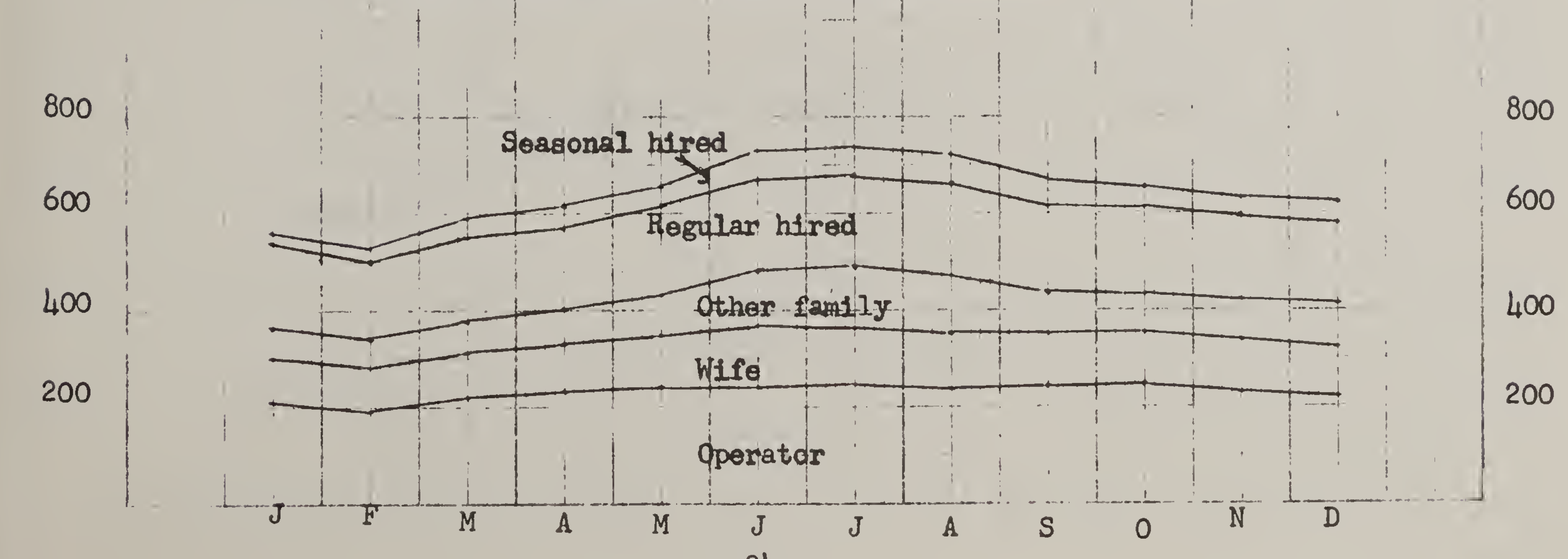
Figure 11



Monthly hours of labor on large fruit and nut farms that hired labor, United States, 1966

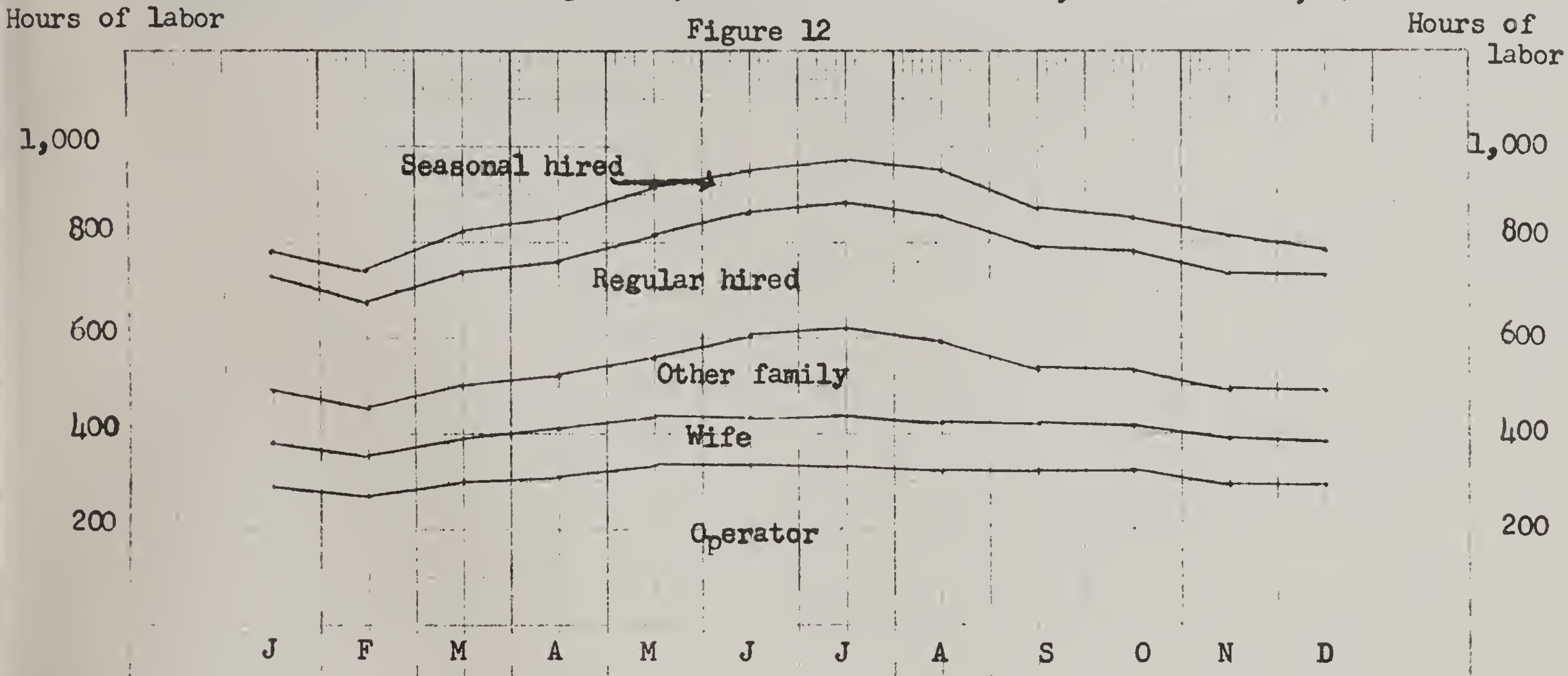


Monthly hours of labor on large poultry farms that hired labor, United States, 1966

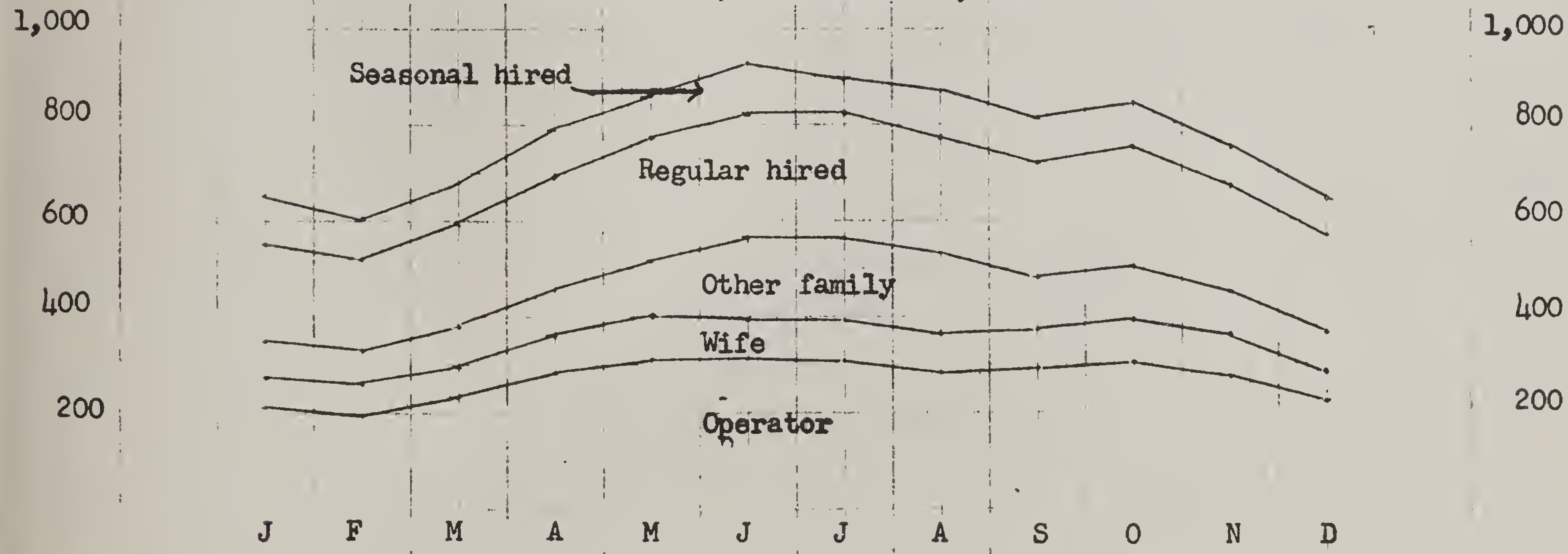


Monthly hours of labor on large dairy farms that hired labor, United States, 1966

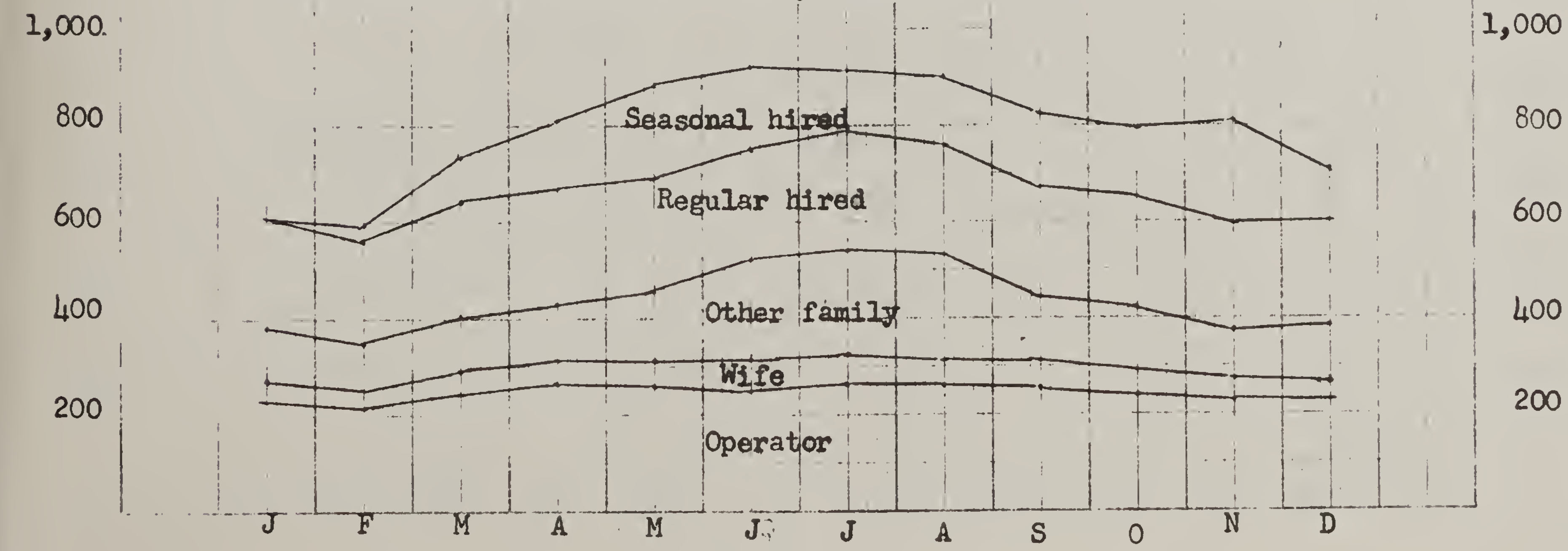
Figure 12



Monthly hours of labor on large other livestock farms that hired labor, United States, 1966

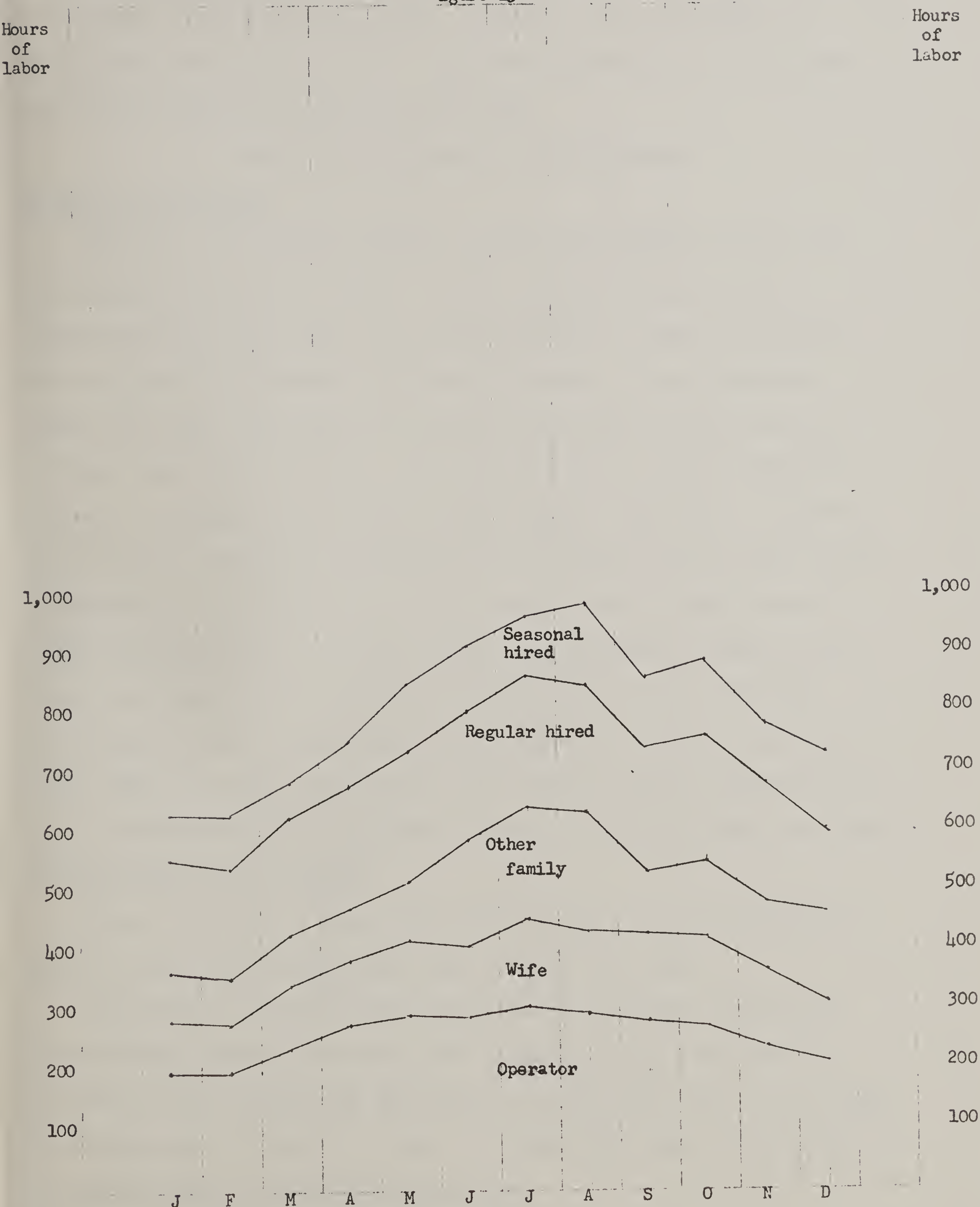


Monthly hours of labor on large livestock ranches that hired labor, United States, 1966



Monthly hours of labor on large general farms that hired labor, United States, 1966

Figure 13



not hiring labor had peaks during June whereas similar workers on farms hiring labor worked most during July. It appears that large farms and farms hiring labor generally had a later peak season then the large-scale farm, or the farm that used only family labor.

Medium Farms ($20,000 to $39,999 Sales)

Farms that Hired Labor

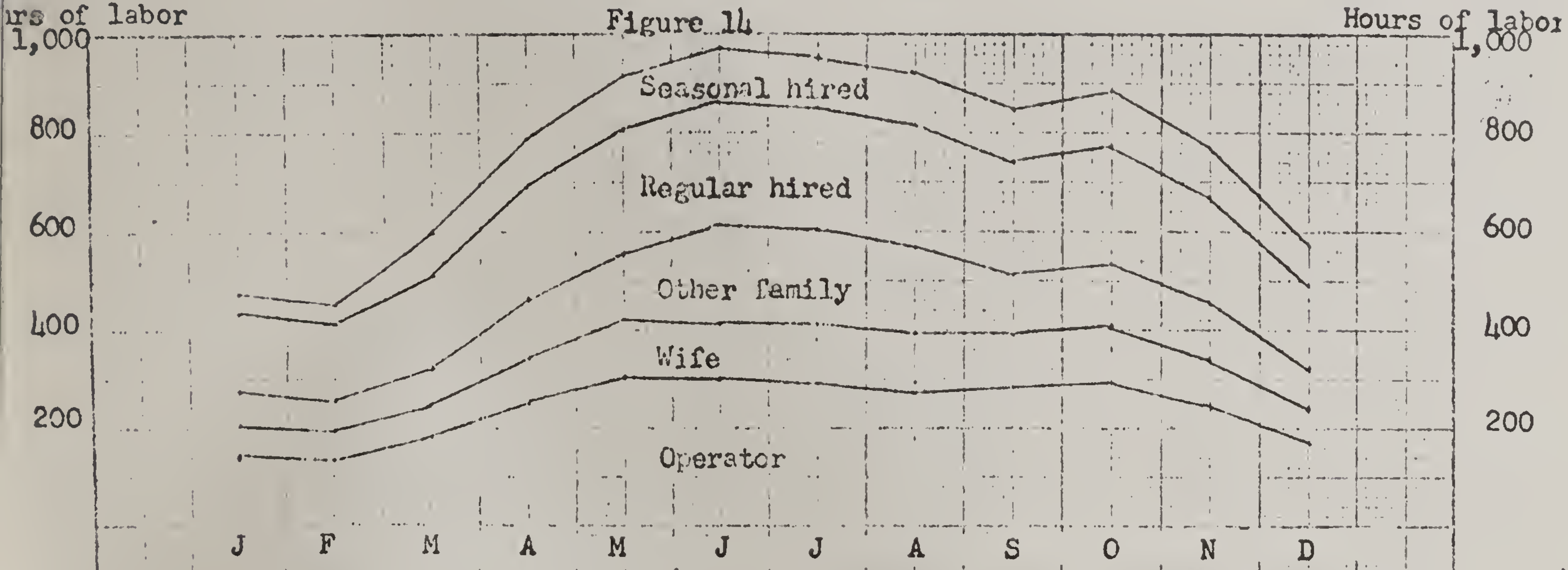
There was a 70 percent increase in family labor between the low and high months for medium size farms. However, seasonal changes in hours worked varied from more then a 220 percent increase on "other field crop" farms to less then 17 percent on livestock ranches. As was noted with larger size farms, most types of livestock operations had less variation in total labor then crop farms. The source of much of the peak seasonal increase in man-hours was the unpaid family workers other then the operator and his wife. The greatest differences in use of other family labor occurred on vegetable and most crop farms. Whereas other family workers did very little work during the slow winter months, they averaged 118 hours of work during the month of peak activity on vegetable farms. Their work hours were nearly 5 times greater during the peak season on tobacco, cotton and other field crop farms. In contrast, their monthly activity increased four-fold on poultry farms and only doubled on dairy, livestock ranches and other livestock farms (figs. 14-17).

On most all types of farms, other family workers are a more important source of labor during peak months then the operator's wife.

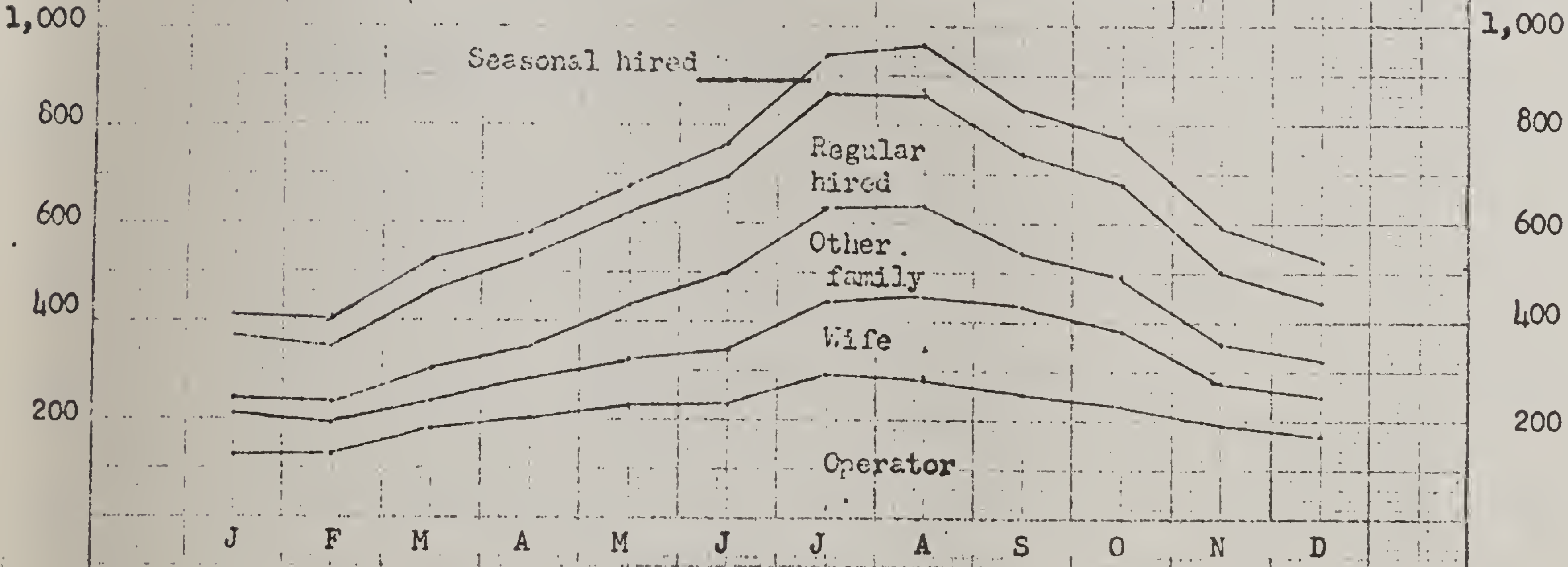
The monthly work load of the operator varied the least on dairy and poultry farms; the most on tobacco and cash grain farms. The dairy farm operator did only a third more work during the peak month then he did during the slowest month. However, on tobacco and cash grain farms the operator doubled his work hours during the peak month.

Monthly hours of labor on medium size cash grain farms that hired labor, U.S., 1966

Figure 14



Monthly hours of labor on medium size tobacco farms that hired labor, United States, 1966



Monthly hours of labor on medium size cotton farms that hired labor, United States, 1966

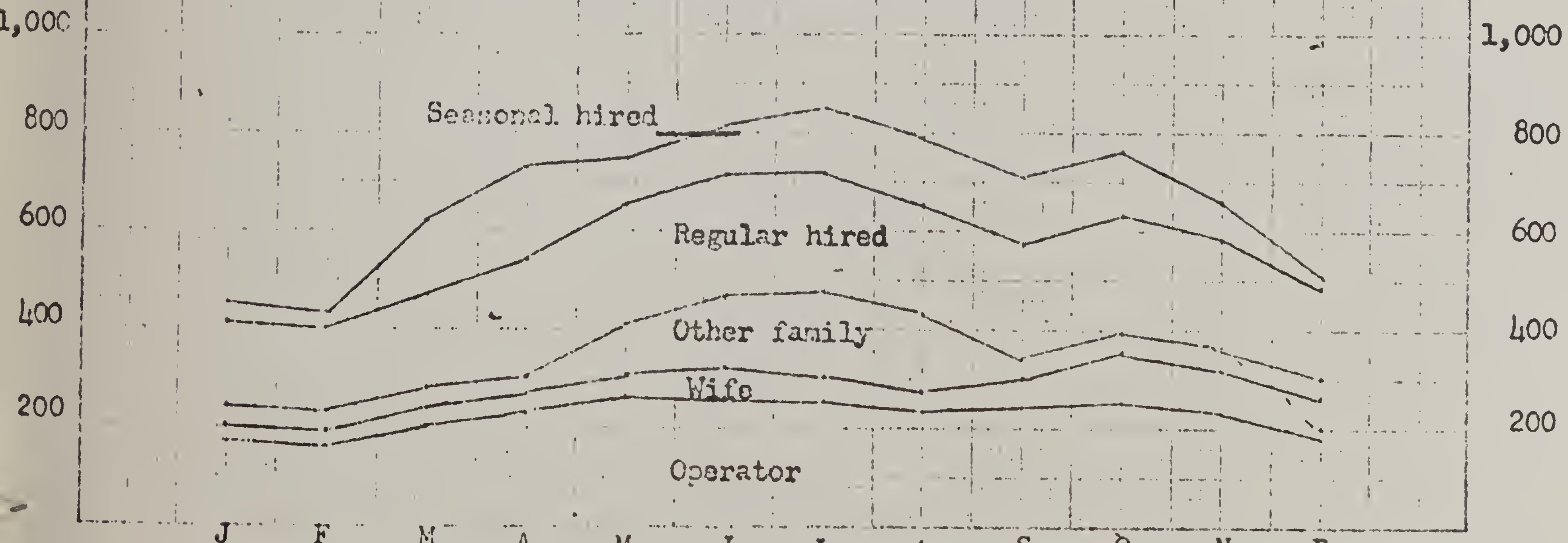
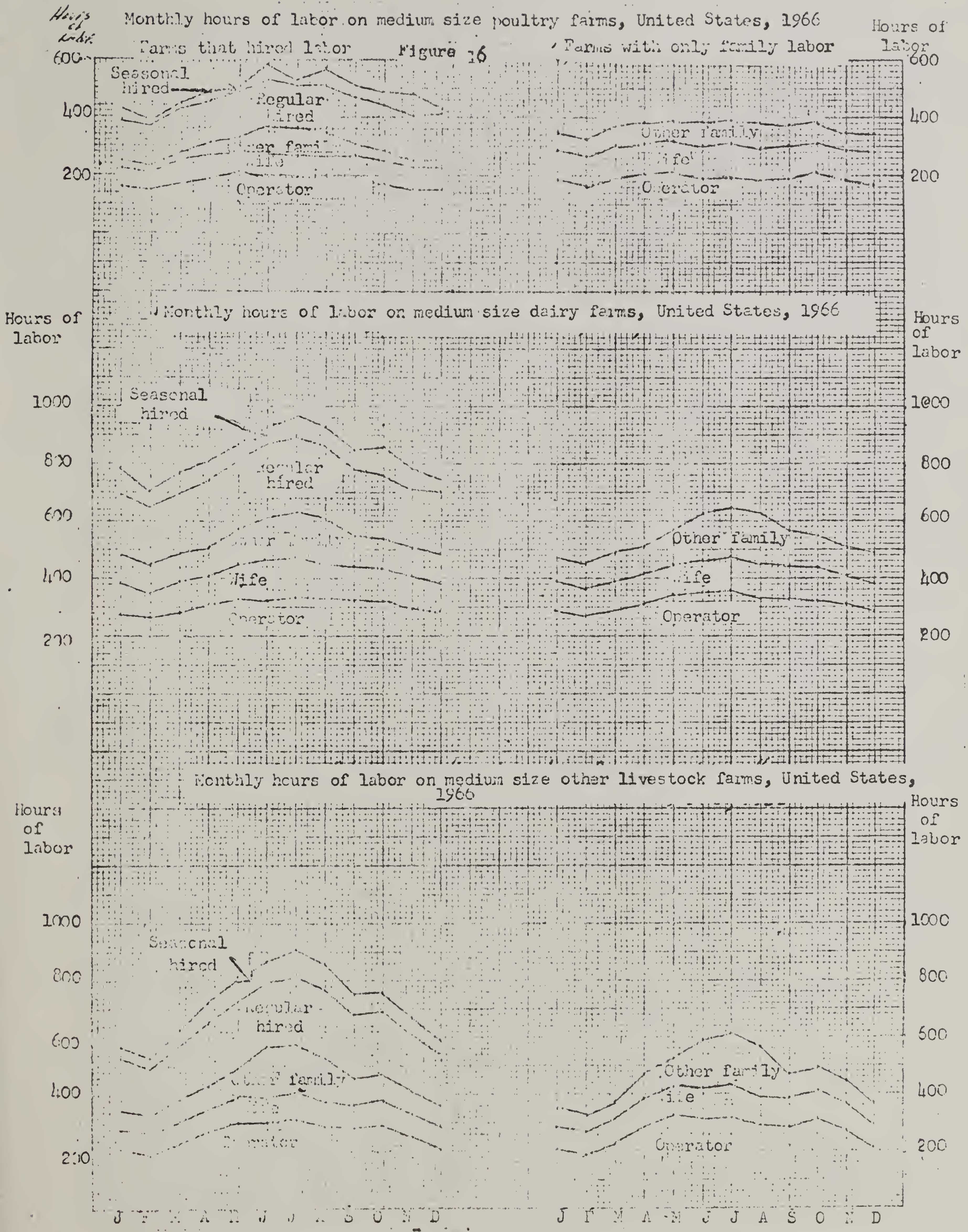


Figure 16



Monthly hours of labor on medium size poultry farms, United States, 1966

Monthly hours of labor on medium size dairy farms, United States, 1966

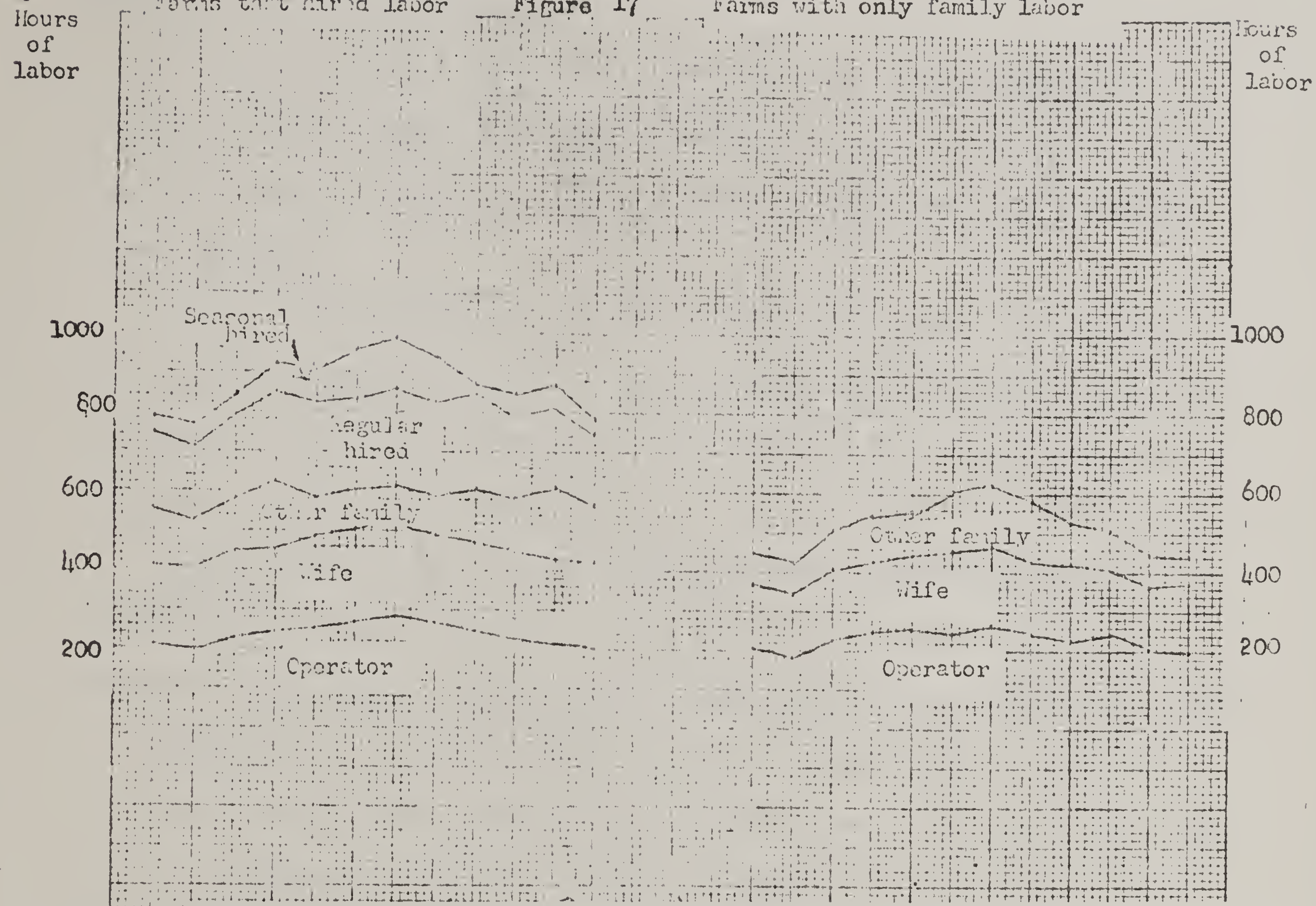
Monthly hours of labor on medium size other livestock farms, United States, 1966

Monthly hours of labor on medium size livestock ranches, United States, 1966

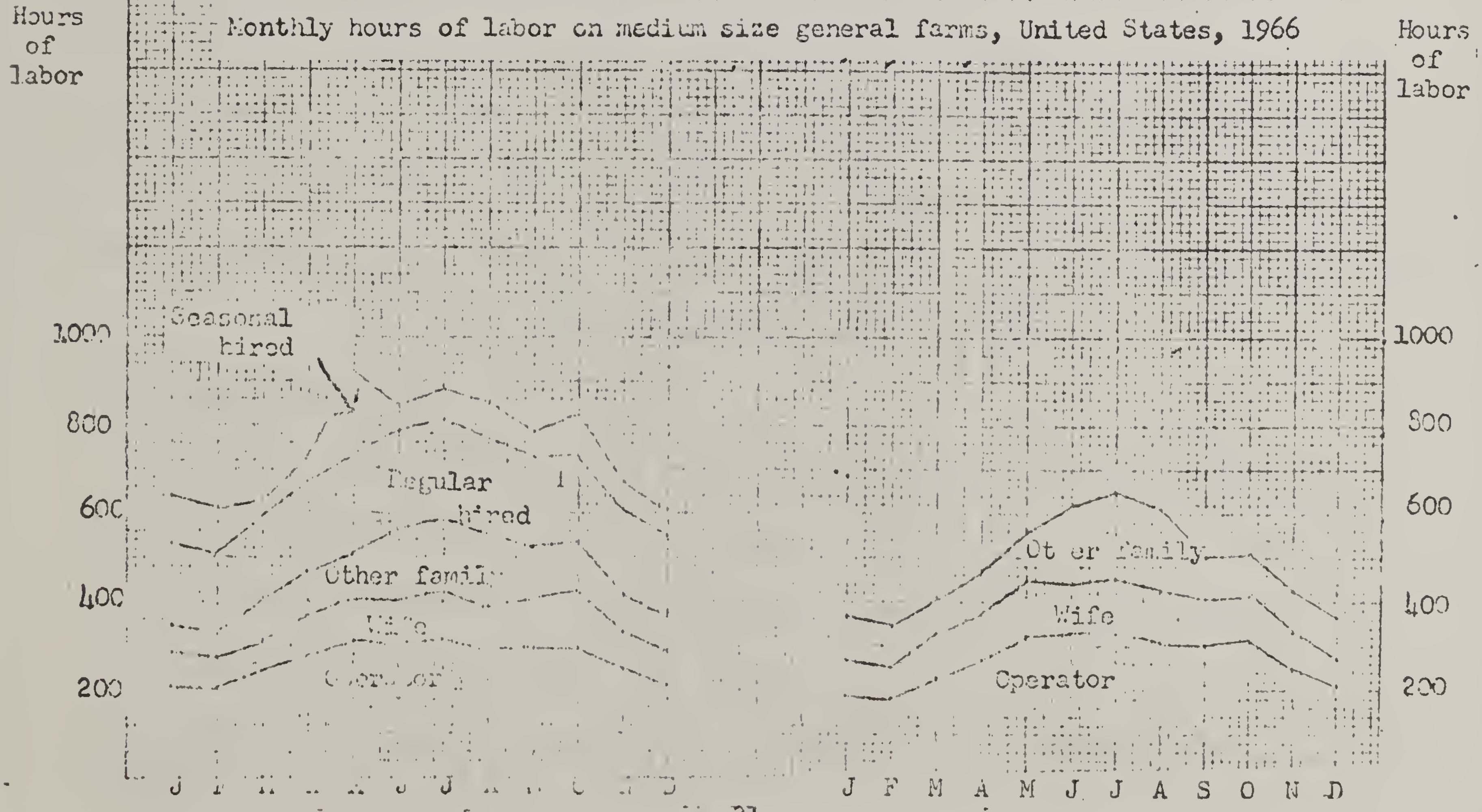
Farms that hired labor

Figure 17

Farms with only family labor



Monthly hours of labor on medium size general farms, United States, 1966



Farms that Used Only Family Labor

In comparing total labor input on medium size farms--those farms relying solely on family labor--used slightly more hours of family labor then farms that hired labor. This occurred on most every type of farm (figs. 14-17).

The peak month of operator labor on medium size cash grain farms and livestock ranches was earlier then it was on similar large farms. On most kinds of non-hiring livestock farms, the operator's peak month was the same on medium and large farms.

Although peak month of labor is usually July regardless of farm size, or whether the farmer hired labor, the use of other family members as a source of labor varies considerably by farm type, size and hiring practices.

The family as a source of labor is more depended upon on the medium size farms then on large farms. Also, at this level, it appears that there was some substitution of labor sources. Hired labor was substituted for family labor on most every type of farm. Where the large farms had more family labor on farms that hired some labor, the reverse was the practice at this size of farm. With decreasing farm size (in terms of gross sales) there seemed to be an attempt to substitute hired labor for family labor.

Small Farms (Less then $20,000 Sales)

Farms that Hired Labor

We have noted in a previous section that as size of farm decreased, operators tended to shift more of the work load to other family members. However, the work load was not shifted from operators to other workers on the poultry farms and livestock ranches. In fact, the wife did very little work on poultry farms, or livestock ranches with less then $10,000 sales (appendix tables 1 and 2).

Much of the operator's work load that is shifted, is to the hired help on these farms. It is less costly to hire help at a low wage rate then it is to use family members who can work for higher wages at a nonfarm position.

Tobacco and vegetable farming, two major users of seasonal labor differed from that of other types of farms in their labor use practices. As farm sales became greater, not only did the operator and other family members work load increase; but the wife and other unpaid family laborers worked more hours then the operator did every month. However, as size of tobacco farms increased, the operator did slightly less of the total family labor. Thus on tobacco farms the shift in labor source was not as great as on vegetable farms.

On most all tobacco farms, the operator's peak seasonal work load was double the hours worked during the slowest month. Yet, the wife and other family members worked 2 to 3 times more each peak work month then they did during the winter months. On tobacco farms averaging $10,000 to $19,999 sales, the peak hours worked was in July for every family member. However, on farms with sales of $5,000 to $9,999, peak work hours occurred for all family workers in August. For those tobacco farms with less than $5,000 sales, the peak month of labor activity ranged from July to September depending on location of farm and source of worker (Appendix table 3).

Peak activity in the Appalachian Region was generally a month or so later then in the Southeast. On the larger farms (sales of $10,000 to $19,999), only cash grain, tobacco and vegetable farmers doubled their monthly work load between the lowest and peak month (Appendix table 4). Even so, all the farmers' work loads were much greater in the peak month then the low month. When you consider operators of the smallest farms only the work load of vegetable, dairy, other livestock farms and livestock ranch operators did not double during peak month.

As for the operator's wife, her hours on the farm are at least doubled during peak season on most farms with under $10,000 sales. The major exceptions are wives on the various kinds of livestock farms. At no level of sales did they have a doubling of their labor although their hours increased markedly over the year.

Members of the operator's family, other then his wife, doubled their labor efforts on most farms which had above $5,000 in sales (appendix tables 3 and 4). The major exceptions were poultry and other livestock farms. On farms having sales under $2,500, other family members more then doubled their man-hours between lowest and highest month on all farms with the exception of cash grain, tobacco and livestock ranches.

Several inferences may be drawn from this section on farm type. Peak work months differ on all sizes of farms, not only among farm types but also among different kinds of workers on the same type of farm. Family labor is used generously throughout the year, but during peak labor months they must increase their labor inputs. The operator and his wife are available most of the year; thus their peak work month depends upon the enterprises produced. The wife's heaviest work load will most likely be in spring or fall while other family members are attending school. Other family members are usually available only during the summer months. Many attend school through the second week of June; therefore July is the most logical time to make maximum use of their time. August generally is a less active month for a number of crops and less family labor is needed.

During peak activity on farms selling less then $20,000 of farm products, there was some shifting of the monthly work load, although the amount and direction of the shift varied by type, and size of farming operations.

On some types of farms, the wife and other family workers put in more hours per month then the operator. Yet on several farms, the operator was the major source of labor all year.

With the increasing cost of hired labor and greatly developed mechanization and technology since this survey, the importance of family labor may be much greater then it was in 1966. Capital investments for mechanization are usually made with the thought of replacing hired labor as a first priority rather then unpaid family labor.

Regional Effects

Whether East or West, in rolling hills or flat plains country, farmers in every region must give some thought and effort to the labor needs for peak season. The social and economic characteristics of a region--many exogenous to the farm--greatly affect whether the farmer will hire a lot of labor, or whether his family will have to be heavily committed to the farm.

Major regional factors such as climate, soil, and topography that determine size and type of farming operations have a significant bearing on regional labor needs. Cost and available supply of workers also are factors that determine how much labor will be hired. In a region where labor is scarce and fairly expensive, fewer hours of labor will be hired then in an area with an abundant labor market and low wages.

Large-scale Farms ($100,000 or More Sales)

The percentage increase in hours of labor varied by kind of worker in every region. In most regions, (eight), the operator maintained a heavy work schedule during most of the year. So during peak season his hours of work increased less then that of his wife and other family workers. Total labor needs per farm in the Mountain Region were only 28 percent greater during peak month then during the slowest work period. Yet, in the Northeast, hours worked during the peak month were nearly double those worked in March.

The least increase in operator's work hours occurred in the Southern Plains; the greatest in the Delta States (appendix table 5). The Delta States was one of the three regions where the percentage increase in operator's hours equalled or exceeded their wife's increase.

Monthly hours worked by the farmer's wife showed less variation on Delta States and Southern Plains farms than in any other region. However, the Corn Belt farmer's wife doubled her hours, while the Pacific and Appalachian farmer's wife increased her farmwork by more than 80 percent over the low month.

The Lake States farms that hired labor used mostly operator and hired labor. The wife and other family members contributed little or no labor on most of these farms. The wife averaged less than 52 hours a month. This is in sharp contrast to the 130 or more hours worked by the operator's wife during peak periods in most of the western regions (appendix table 5).

Family members other than the operator and wife are quite important on large-scale farms. In all but 2 regions they worked more hours during the year than the operator's wife. The percentage change in their work load from low to peak month was tremendous. In 2 regions, their farmwork schedule more than trebled, and in 6 other regions, doubled. Only in the Appalachian and the Pacific Regions did the increase in other family members' work load occur at about the same rate as the operator.

The seasonal differences in labor used on farms with only family labor, and that of farms hiring labor are of significant interest. The biggest difference in labor needs between farms that hired and those that used only family labor is the acreage in crops and the type of crops grown on those farms. Farms with only family labor in most instances had fewer acres of total farmland and fewer acres in intensive labor crops. Even when farms that hired no labor had more acreage in total farmland most of it was in pasture or other uncultivated acreage. Therefore, the operational practices of farms that used only family labor was such that these farms generally did not use any more family labor then those farms that hired labor.

Peak Work Months

On large-scale farms that hired labor the peak work months varied widely among regions. Peak month for the operator ranged from May through October. Although farm operators in 4 regions had peak work periods in July, operators in the Southeast and Corn Belt Regions worked more hours in May. The reason for the increase in hours worked during May and October in the Corn Belt was the great majority of other livestock farms there. Seventy percent of the large-scale Corn Belt farms surveyed were other livestock farms. These farms averaged almost $143,000 in sales of livestock, 74 percent of which was cattle. Calving and farrowing on these large beef and hog farms demand more of the operator's labor in May and October.

The peak season was quite late for farmers in the Northeast and Lake States Regions. In the Northeast, the October peak was due to the large number of poultry and fruit and nut farms. In the Lake States the late peak was primarily due to the labor used on other livestock and fruit and nut farms. Major enterprises on these farms were beef cattle and apples.

As for the operator's wife, her peak month occurs either early in the year (May) or quite late--October and November. It appears that the wife

was used as a fill-in when other workers were not available. She usually helped with the spring planting in the South and Pacific Regions. However, in the Northeast and Midwestern Regions she worked more in October and November harvesting crops.

There was little question as to the peak season for unpaid family workers other then the operator and his wife. In 7 of 10 regions their peak work month was July. March was the peak month of work in the Delta States (land fitting and planting of cotton). While in the Northeast and Pacific Regions, more of their time was used in September.

Every region had some farms which increased their labor input during the harvest season. Logically, it would appear that whether a farm hired, or did not hire labor had little effect on the peak month, or the need to gear up for sizeable increases in labor supply during peak season. Crops generally mature at the same time within a given region. The same types of farms and farms in the same region then should have the same peak month. The difference then was that farms using only family labor used fewer hours of labor to cultivate and harvest their smaller acreages of crops.

Large Farms ($40,000 to $99,999 Sales)

Farms With Hired Labor

The seasonal magnitude of the changes in hours used to operate farms with sales of $40,000 to $99,999 as well as large-scale farms are quite significant. The peak work months and the magnitude of change in hours worked differ from region to region.

In the discussion of the effects region had on the large-scale farms we found that not only did demand for labor vary, but the peak demand for each source of family input varied by region. Data for farms with $40,000 to $99,999 in sales also indicates that the peak month for the operator occurs most often in May and July. Farm operators in half the regions worked more hours during

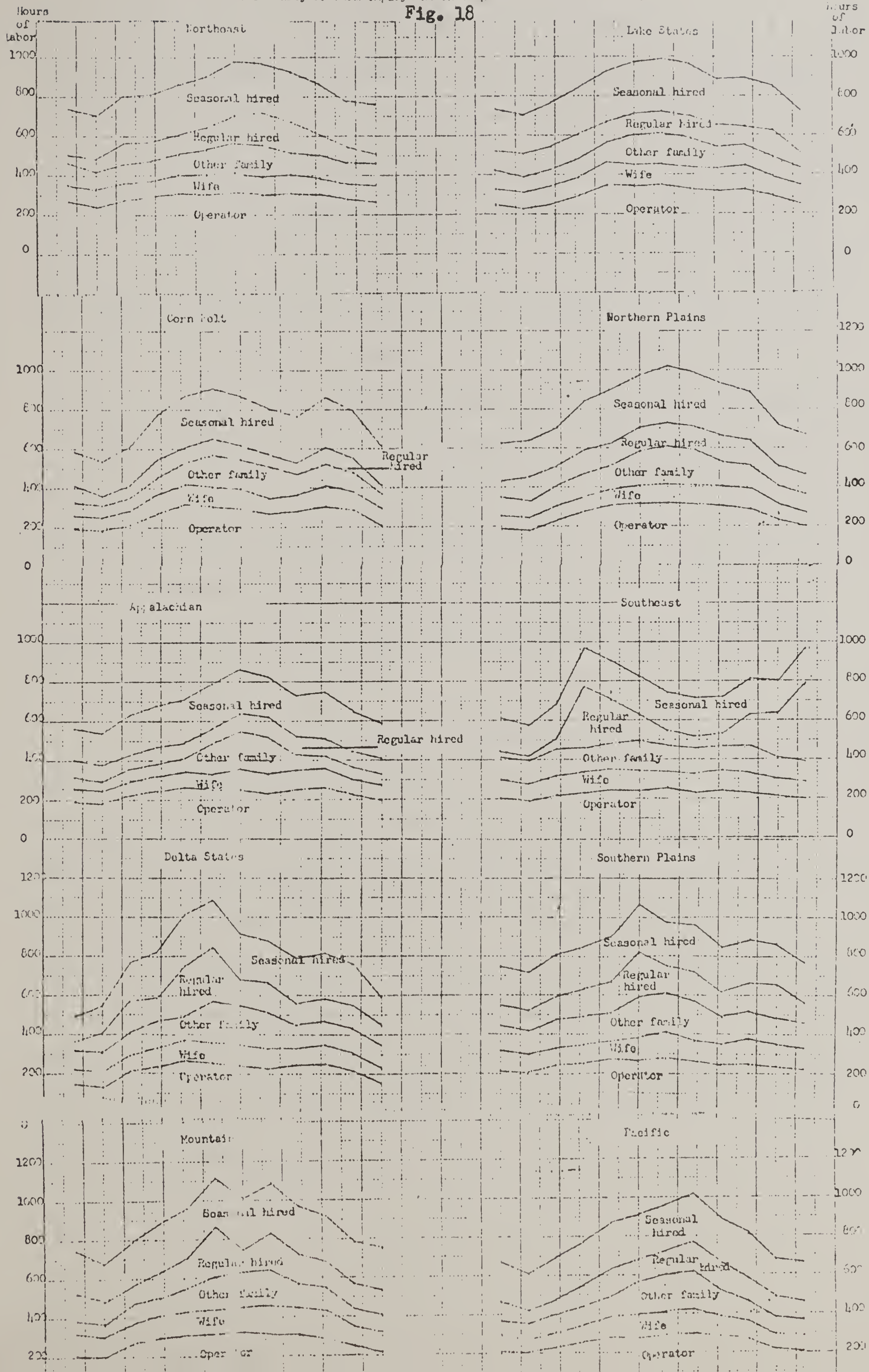
July than any other month, while operators in 4 regions had peak activity in May. It appears that farm operators in the Corn Belt in both size groups ($40,000 to $99,999 and $100,000 and over sales) have two peak periods--May, the highest, and October having only a few hours less. Although May and October were not peak months for other family members in the Corn Belt, they worked more hours than usual during those months. Other livestock farms represented 61 percent of all farms in the Corn Belt with sales of $40,000 to $99,999 and cash grain farms were next with 28 percent of the total. The livestock farms at this size had about 55 percent beef and 45 percent hogs and other livestock. These two types of farm operations used more labor during May than at any other time during the year; thus the region's peak occurred at that time.

The peak activity month for Pacific Region farms occurs in August for all family workers on large farms. The main demand for labor at this time of year comes from cash grain and vegetable farms, both large consumers of labor. Peak labor month for operators in the Pacific Region was later than for operators in any other region (Figure 18).

Operators of farms with sales of $40,000 to $99,999 in the Southeast had their peak month in July, although large-scale operator's peak was in May. This difference in peak periods occurred primarily because most of the labor used on large-scale farms was on poultry and vegetable farms and was needed earlier than labor on general and tobacco farms at the $40,000 to $99,999 sales level.

Seasonality of farm employment on large farms that hired labor

Fig. 18



Overall, farmers in the $40,000 to $99,999 sales range had to gear up for greater seasonal changes in their work schedules than did the large-scale operators. While large-scale farms increased their work load by 41 percent, the lower sales group increased their hours of labor by 56 percent. This larger increase occurred for all members of the operator's family. There was considerable variation among the regions. Lake States farm operators with sales of $40,000 to $99,999 were the only ones with a lower increase in their work load than operators on large-scale farms. The lowest percentage increase in hours worked from low month to high month was in the Northeast and the greatest seasonal increase in operator work occurred in the Delta States. This is probably due to the predominance of dairy farming in the Northeast which requires sizeable labor input every month of the year. In contrast farmers in the Delta States grow labor intensive crops that use labor for a relatively short time.

As for the operator's wife on farms with sales of $40 000 to $99,999, most of their heavy work months were late in the year; two regions in September and four in October. Wives in the Southeast had the earliest peak month (June), but this was later than the peak for wives on large-scale farms in that region. In 6 of the 10 regions, the seasonal difference in monthly hours worked was not as great for wives in the $40,000 to $99,999 group as it was for the wives on large-scale farms. Although the operator's wife put in substantial hours of farmwork in every region, she contributed less than the operator or any other family members.

Similar to the large-scale farms, peak work load was in July for the unpaid family workers--other than operator and wife, in 7 of 10 regions. In the Delta States and Southeast Regions their peak month was during June, the earliest peak for other family workers on this size farm. Much of their labor in the Delta States was on cash grain farms that use more labor during June.

The entry into the farm labor force for short term seasonal work by unpaid family workers is largely responsible for the dramatic increases in the labor force during the summer season. During 1966, farmers in every region but the Southeast greatly increased their families labor force participation between February and July. Other family member's hours more than trebled in the Appalachian Region, and more than doubled in five other regions, between winter and peak summer months. The major reason for the great variation of other family workers in the Appalachian Region is due to the type of farming. Many of the farms in this region are field crop farms that use little or no labor from other family members during the winter months, but rely rather heavily on them during the summer. This is pretty much true for the other five regions that have large increases in labor during the summer months.

Farms that Used Only Family Labor

Large farms in half of the regions used less family labor on farms not hiring labor than was used on farms hiring. For example, farm families in the Southeast that used only family labor used over 1,600 fewer hours of family labor than farms hiring labor. Farms not hiring labor in all Southern regions used much less operator and other family labor than farms hiring labor. However, wives worked more on nonhiring farms. Whether or not a Southeast farm hired some labor, operators and other unpaid family workers had a fairly constant work schedule throughout the year. This was because these farms were mostly poultry and general farms that use about the same amount of labor all year.

Farms in the Northern Plains and Mountain Regions that did not hire labor used only slightly less family labor than farms that hired. Too, there was a greater change in monthly family labor input on farms that used only family labor in both regions.

In the Northern Plains and Mountain Regions, the cash grain and other livestock farms that used only family labor were not quite half as large in acreage as the farms that hired labor. Thus, the major factor was amount of acreage per farm. However, in the South, farm acreage and type of operation both played a role in family labor input being greater on farms that hired labor.

In the Southeast and Mountain Regions, operators on farms that used only family labor had earlier peak months than farm operators that hired labor. In the Northern Plains the peak season was later for operators that used only family labor.

In half of the production regions, the operator's wife on farms using only family labor had earlier peak work months then the wife on farms that hired labor. Other family workers had the same peak month of labor input whether their farm hired labor or not in the five regions (fig. 18 and appendix table 7).

In the regions where family labor on farms not hiring exceeded the family labor on farms that hired labor, most were in the Northern and Western [4] extremes of the country. Much of the labor on non-hiring farms in these regions was on livestock farms that used a fairly constant heavy work schedule throughout the year. Farms in these regions that hired labor were more likely to be fruit, vegetable, or field crop farms and much larger in terms of acreage then the non-hiring farms.

The greatest increase in family work schedule took place on Delta States farms whether they hired labor or not. The great difference in work loads between winter and summer was due to the highly seasonal nature of cotton and cash grain farming in that region. The least change in work schedule for family workers on farms not hiring labor was in the Southeast and Pacific Regions. Basically, farms not hiring labor in the Southeast were poultry operations and those in the Pacific were dairy farms. Both of these farming operations usually need heavy labor inputs every month with only small increases during peak seasons.

Medium Farms ($20,000 to $39,999 Sales)

Farms that Hired Labor

The great seasonal variation in hours worked have been discussed in the sections on large and large-scale farms. We noted that peak month

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[4] Consists of Northeast, Corn Belt, Lake States and Pacific Regions.

varies between regions and between kinds of workers within each region. In this section, only the differences in the magnitude and shift of work load will be discussed where it is significantly different from that of the two larger farm groups.

The average farm with $20,000 to $39,999 in sales used only a few hours less labor per month then farms with sales of $40,000 to $99,999. Although the hours worked during peak month were not as great, the increase in hours from low to high month was somewhat greater for the medium size farms. This greater increase in work load occurred mostly in the Western regions. The increase in work load between low and peak month was due mostly to the efforts of the operator and family members other then the operator's wife. Whereas the increases in hours were greatest on the large and large-scale Delta States farms, the greatest seasonal increase in use of labor on the medium size farms occurred in the Northern Plains and the Pacific Regions.

On the large farms, we noted that peak labor months for operators ranged from May through October. On the medium sized farms, there were only two months of peak activity for the operators (appendix table 8). In 7 of 10 regions, the operator worked more hours during July then any other month. May was the month of peak activity for the other 3 regions. Much of the work on a large proportion of farms in these 3 regions (Southeast, Corn Belt and Lake States) was with livestock and grain. In each of these three regions, the farms studied averaged more then 100 acres of cash grain. This was a crop that used considerable operator hours during May.

As for the operator's wife, her peak month on medium size farms was spread across 7 months of the year. The only clustering of peak month by regions was in July. Only on Northeast dairy farms, Southeast tobacco and other livestock farms, and Mountain Region other livestock and cash grain farms did the wife work more hours during July. In contrast, the Corn Belt

farmer's wife worked most during May, while the wife of the Delta States farmer worked more during December.

Family workers, other then the operator and his wife, supplied more hours of labor during July, just as similar workers did on large and large-scale farms. However, the concentration of those working more hours in July was greatest on the medium size farms. In only one region, the Corn Belt, did other family workers have a different peak work month. There they were needed most during June on cash grain and other livestock farms. Even on these farms they did almost as much work in July as they did in June.

Farms that Used Only Family Labor

In half the regions, medium size farms that relied on only family labor used more family labor then farms that hired labor. Even so, annual hours of labor were not much different except for farms in the Mountain Region. The wife was the source who furnished most of the difference in the family labor on those non-hiring farms. Only in the Southeast was there a vastly greater amount of family labor on farms that hired than on those that did not hire. Most of this labor was supplied by the operator. On farms that hired labor he worked a third more hours annually than operators who used only family labor (appendix tables 8 and 9).

Operators in the Northeast and Lake States worked more hours during the year than farmers in other regions whether they hired labor or used only family labor. At the other end of the spectrum, Southeast operators and their families put in fewer hours of labor than farmers in any other region regardless of whether they hired labor or not.

In 8 of the 10 regions, operators that used only family labor had the same peak work month as operators that hired labor. In the Delta States, the peak was 2 months earlier on farms not hiring, whereas in the Pacific, it was a month later. Other family members' peak work load occurred in July for 8 of 10 regions whether the farm used hired labor or other family labor. In general, farms in the Southern regions had their peak work schedule in May, about 2 months earlier than farms further North and on the West Coast. Hiring labor had little, if any, effect on peak work month although in 3 regions there were vast differences in the annual family work load between farms that hired and those that did not hire. Much of the difference in work schedules between regions was due to the regional factor rather than hiring practices. Even though there was some differences in family labor use between farm sizes and regions, there was also much similarity.

Small Farms (Less than $20,000 Sales)

Farms that Hired Labor

The average farm operator in the Appalachian and Northern Plains Regions doubled his hours of farmwork during the peak season. This was also true for his family. Much of this increase in the Appalachian Region was because of the large number of small tobacco farms. On these farms the family does little farmwork during the off season, but is expected to contribute heavily during peak season. Cash grain farms in the Northern Plains were the major operations where the operator and family doubled their work load during the peak season. Also in that region, the family is heavily depended upon to supply much of the labor needs of the farm.

Peak season required more hours of operator labor on Lake States farms with sales of $5,000 to $19,999 than any other region (appendix tables 10 and 11). For farms with less than $5,000 in sales, farmers in the Mountain Region worked more hours per month during the summer than farm operators in any other region (appendix tables 12 and 13).

On farms with less than $10,000 in sales, operators in 8 of 10 regions worked fewer hours during peak season than the rest of their family. However, this occurred in only 6 of the 10 regions on farms with sales between $10,000 to $19,999 (appendix table 10).

In some regions, operators depend on other members of their family for most of the family labor throughout the year. Yet, in other regions the operator does most of the family work all year.

Even on small farms, it appears that peak work loads do not occur for all members of the family during the same month.. On farms with $10,000 to $19,999 sales, farm operators in 6 of 10 regions worked more hours during July than any other month. Operators on Pacific and Southeast farms worked more during August. On farms with less than $10,000 sales, operators and other family members still had their peak labor activity in July. However, on these smaller farms, operators in at least four regions worked more hours during June. These were generally Southern regions which had earlier seasons than the rest of the country.

The operator's wife on the farms with sales of $10,000 to $19,999 put forth her maximum effort late in the season when most of the rest of the family dropped their farmwork for school books. This was the case in 5 regions. However, on some of the farms with less than $2,500 sales, more help was needed during the planting season.

In at least 4 regions, the operator just luckily had a wife that could pitch in and make most of her work commitment at that time.

The major point of this section is that the various sources of family labor are depended upon at different times of the year and their peak month of work varies widely depending upon the region in which they live. Also reflected is the heavy dependence on family labor most of the year in every region on every size farm.

SEASONALITY OF HIRED FARM LABOR

Among many questions faced by operators each year are: How much labor will I need and where will it come from at peak season? The answers become more difficult each year. The farmer has to place considerable reliance on the whims of persons not in the labor force most of the year, such as youth, housewives, and older workers to meet his peak labor needs at the critical planting and harvesting periods. 5/

This section of the study is concerned with reporting how labor was used and what proportionate share of total labor needs were hired labor and at what time of year these needs arise for different farms.

In general, less than half of the smallest farms (less than $2,500 in sales) hire any labor. But because of the intensive labor needs on crop farms, the operator and his family usually are unable to supply all the labor even on the small crop farms. In contrast, on many livestock farms labor inputs are about the same throughout the entire year. Thus, the amount of labor used between seasons does not change with the same magnitude as occurs on crop farms. Even so, most of the large and larger-scale farms had to use hired labor to maintain their crops and livestock operations during 1966. 6/

5/ Seasonal Work Patterns of the Hired Farm Working Force of 1964 AER No. 102, Economic Research Service, U.S. Dept. of Agriculture. About one million more persons work in the summer than work in the winter. Eighty percent of the workers of this seasonal variation were out of the labor force most of the year.

6/ Family and Hired Labor on U.S. Farms, 1966, U.S. Dep. of Agriculture, ERS Statis. Bul. No. 459, December 1970.

There was a seasonality pattern of demand for all workers, as well as for regular and seasonal hired. 7/ With the seasonal hired labor force there were two major categories: those paid directly by the operator and those paid by crew leaders. This report concerns itself with only labor hired and paid directly by the operator, or his manager.

The first part of this report discussed family labor on farms that used only family labor along with those farms that hired labor. However, this section on seasonality of hired labor, deals only with farms that hired some labor during 1966. Thus the number of farms in this section is somewhat less than the number of farms reported on in the family labor section.

Hours of labor may appear somewhat higher than in other studies. Many labor studies average their hours on an all-farm basis. Data in this report are on a farm reporting basis, i.e. if the schedule did not report on an item, the farm was dropped from the farm count when programming for farm averages. Thus, data in this report refer only to those farms that hired labor and are actual hours reported by the farmer. 8/

7/ In this report seasonality and seasonal use of labor is not to be confused with seasonal workers. For example, there can be a seasonal increase in regular hired and total workers as well as a seasonal increase in seasonal workers (persons who do hired farmwork for less than 150 days during the year).

8/ In editing the labor data the following restrictions were imposed on hours and days worked to compensate for any over reporting on the part of the respondant. There was a limit of 96 hours per week, 26 days a month and 312 days a year that a single individual could work. It is suspected that this restriction has a greater impact on reducing the over reporting of family labor more so than hired labor.

With the moods of today's social reformers being against continued seasonal migrancy of large groups of farmworkers, some major changes will have to come about for farms in some regions. In the future, farmers will have to be diversified enough to be able to employ workers year-round. That is, a farmer in the Corn Belt or Lake States who grows field crops or fruit and at present uses only seasonal hired help will have to have enough livestock or other enterprises that require year-round attention so the farmer can use the hired help all year. There are three other suggested alternatives. Farmers may form cooperative labor pools where farmers who hire workers all winter to tend livestock could share the worker's services with a crop farmer during his spring planting and fall harvest. This way the farmers would have sufficient help--the worker would be hired full-time all year. Another alternative is to share the worker's time as much as possible and supplement his annual income with an unemployment insurance fund. If none of the above alternatives are workable, the probable result will be the shifting of most of the intensive labor crops into regions that have an abundance of family labor and an under-utilized labor force where climatic conditions and diversified farms can be geared to use hired labor for year-round production. Otherwise farmers will have to mechanize enough so that their family and local workers can do all the work.

Just how important is hired labor to the overall labor needs of various types of farms? What is the magnitude of their use from slack to peak season? What sizes of farms have the greatest changes in work force needs over the year?

Using 1966 data obtained in the Pesticide and General Farm Survey, the first emphasis will be to see what happened among various types of farms in relationship to their size.

Seasonal Labor Practices Among Different Types and Sizes of Farms

Both measures of increased activity (proportionate share of work and absolute hours) occurred for hired help on most farms. On some farms, such as tobacco and poultry, hired labor was not used as much as it was on fruit farms and dairies. The source of hired labor also varied by type of farm. Even though regular workers supplied most of the hired labor on every type of farm their proportionate share of the labor input varied significantly among the farms. For example, poultry farms with only a sixth of their hired labor from seasonal workers used less seasonal labor than any other type of farm. In contrast, fruit farms used seasonal workers for a third of their hired labor. In general, all of the crop farms, except tobacco relied more on seasonal labor than did the various livestock operations.

The magnitude of inter-seasonal shifts in labor needs also varied among the types of farms. Total 9/ labor changed the least between seasons on livestock ranches and the most on tobacco and cash grain farms. The changes in monthly work schedules for regular hired workers was lowest on poultry farms and greatest on tobacco farms. The least change in work schedules between seasons for seasonal labor was on dairy and general farms, but there were major increases in seasonal workers on livestock ranches and cotton farms. Except for a very small number of hours worked [illegible] during December, there was not much difference in monthly work schedules between seasons on livestock ranches.

9/ Includes family and hired labor.

Table 2.--Percentage change in hours worked between month of least farm work and peak season by regular and seasonal hired labor, by size and type of farm, 48 States, 1966

Type of farm	Percent change, low month to peak month on--											
	Large-scale farms 1/			Large farms 1/			Medium farms 1/			Small farms 1/		
	All labor 2/	Hired 3/		All labor	Hired		All labor	Hired		All farms	Hired	
		Regular	Seasonal		Regular	Seasonal		Regular	Seasonal		Regular	Se
	Percent											
Cash grain	121	76	1,045	115	79	264	114	66	218	103	61	2
Tobacco	5/	5/	5/	145	91	118	136	99	154	152	108	1
Cotton	72	43	4/	96	89	4/	95	47	713	47	46	1
Other field crops	93	50	109	42	36	178	183	35	4/	81	93	1
Vegetable	129	52	673	109	54	4/	50	49	133	163	290	[illegible]
Fruit and nut	50	26	311	67	31	462	51	18	144	90	79	1
Poultry	25	17	261	39	20	138	55	22	592	30	52	3
Dairy	13	9	69	31	20	87	34	29	71	44	40	7
Other livestock	51	38	162	54	38	53	69	46	112	59	42	7
Livestock ranches	48	18	4/	55	15	4/	28	35	357	87	49	[illegible]
General	66	27	171	56	23	131	53	34	390	63	79	11
All farm types	41	32	68	56	39	71	58	39	59	63	50	5

1/Farm size: Large-scale farms, those that sold $100,000 or more in farm products; large farms, those that sold $40,00 to $99,999 of farm products; Medium farms, those that sold $20,000 to $39,999 in products; Small farms, those that sold $10,000-to $19,999 in products. 2/Includes family and hired labor. 3/Regular hired are those persons who worked 150 days or more on the farm surveyed. Seasonal workers did less than 150 days of wage work for the farm surveyed.

4/No seasonal labor hired during slack months.

5/Only 1 large-scale tobacco farm surveyed.

Analyzing changes in work hours for farm types in the aggregate tends to flatten out the peaks or make them too sharp. The following section indicates what happens by varying the size of farm operation.

Data indicate that total monthly labor needs on the average large-scale farm increased about 41 percent from February to August (figure 1 and table 2). This of course varied by kind of worker. Average hours of regular hired labor increased only a third, but seasonal worker hours increased more than two-thirds. For all large-scale farms, regular hired hours were greatest during July while that of seasonal workers was greatest during May. There were seasonal hired workers during every month of the year on large-scale farms somewhere in the U.S. Even so, the increase in use of seasonal hired hours was greater than what occurred for operators, wives, or regular hired workers. Only unpaid family workers registered a greater increase in hours. But much of their increase was because they worked very little during the winter.

As seen in figures 6, and 8 there is a 3 to 4 month peak of hired seasonal labor input on cash grain, cotton and other livestock farms and livestock ranches. Peak season runs from May through July on cash grain and cotton farms; July through October on other livestock farms; and June through September on livestock ranches.

Vegetable farmers reported a tremendous influx of seasonal workers from May through August. After August their need for seasonal workers dropped sharply (figure 6).

Magnitude of Seasonal Changes in Labor Input

Regular hired labor on large-scale farms registered the greatest seasonal changes in their work schedules on cash grain and vegetable farms. The least change occurred on dairy farms--monthly hours of work increased less than 10 percent on this type of large-scale farm.

The earliest peak season was on cotton farms where regular workers put in more hours during May. Nearly half of the farm types studied used more regular hired labor during July. However, 3 types, other field crops, dairy farms, and livestock ranches had the latest peak season--October.

A vastly different pattern of peak labor use emerges in the seasonal labor force. Vegetables and fruit and nut farms were by far the major users of seasonal labor. Vegetable farms averaged only about 80 hours during 2 winter months, but used over 550 hours a month from May through August. In this study labor use patterns of large-scale fruit and nut farms were grossly affected by citrus growers. Certain crops are associated with bigness and are located in specific regions. For example, citrus farms in this study are extremely large and are primarily located in the Southeast. These farms use most of their labor from October to May; thus their seasonal peaks will be different from fruit farms that are smaller in terms of sales and comprised mostly of apple and peach orchards. Their peak season for the smaller farms will be in late summer or fall and will influence the work schedule for the Northeast and Pacific Regions.

Citrus growers' low work month was in July. They used over 500 hours of labor per month from January through May with the greatest amount in May. General farms was another type that used a significant number of seasonal hours of labor. These farms peaked from September to November with the slack time in April.

Although the greatest percentage change in seasonal hours worked occurred on cash grain farms, this resulted from the small amount of seasonal labor hired during the winter months. In terms of actual hours, the seasonal increase was not near as great as occurred on vegetable and fruit farms.

Seasonal hired labor is used very sparingly on poultry farms. Even large-scale farms used only about 600 hours all year with no more than 83 hours during their busiest month. Dairy farms tended to use about the same amount of labor most of the year. Whereas most types of farms more than doubled their hours of seasonal labor, dairy farms increased seasonal hired hours by only 69 percent. For large-scale dairy farms, their slowest work month was during June with their peak season in November. The average large-scale fruit farm hired almost as many hours of seasonal labor as the entire farm family furnished.

Whether labor use patterns significantly change due to farm size alone is not easy to ascertain. Data in this study do indicate that large-scale farms hired a greater percentage of their labor than did other size farms during nearly every month of the year. However, there is considerable difference when sources of hired labor and the percentage of work done on each farm size is introduced. More hours of hired labor was done by regular hired workers on large-scale farms than they did on any other farm size. But the percentage of total work that was done by regular hired workers was less on large-scale farms than any other size of farm--26 percent compared with 28 to 31 percent. The difference then is basically caused by large-scale farms using a higher percentage of seasonal hired labor than used on other sizes of farms during every month

of the year (figures 1-5). The smaller the farm, the less (percentagewise) seasonal hired workers contributed to each farm's total labor input. Much of this difference in hired labor use among farm sizes is attributable to the type of farm, its geographic location, and the ability of the operator and his family to do most of the work on the smaller farms. For instance, the smallest farms hired 39 percent of their total labor compared to 43 percent for the largest-scale farms. But 39 percent of the work on the smallest farms is only about 2,100 hours, whereas 43 percent of the work on large-scale farms is more than double that amount.

Many of the large-scale farms studied were labor intensive crop farms that used many seasonal laborers for a short period of time. The sharp peak season is readily observable in figures 7 and 8 that shows the farmwork schedules for large-scale vegetable and fruit farms.

Seasonal labor usage varies considerably among the different types of farms within each size group.. Among large farms, tobacco farms had the greatest change in their monthly work schedules. Cash grain and vegetable farms also experienced a doubling of hours of labor from slack to peak month. In contrast, the least change occurred on dairy and poultry farms. This in essence is also what happened on the largest-scale farms. However, there was only a slight seasonal increase in hours worked on large dairy and poultry farms.

Primarily the major shifts in monthly work schedules was because of the increased use of hired seasonal and unpaid family workers.

In any discussion of the seasonal changes in work schedules, there are two ways to measure the magnitude of change--percentagewise and absolute hours. It is questionable as to whether it is not just as difficult for an operator of a small farm to increase labor input by 63

percent as it is for a large-scale operator to increase labor input on his farm by 41 percent. For seasonal changes in total labor input per farm there seems to be an inverse relationship between farm size and change in work schedule. The smaller the farm, the more percentagewise the operator has to increase the total input on his farm for peak season (table 2). Labor input also varies by type of farm and source of labor with cash grain farms the major exception. Seasonal increases in hired and family labor input on cash grain farms were greater for each succeeding larger size farm.

Dairy and poultry farms reported the least seasonal variation in their total monthly work schedules on every size farm except those with sales of $20,000 to $39,999. On medium size farms, livestock ranches had the least seasonal change in their total and regular hired labor input. Poultry farms reported seasonal variation in monthly work schedules from about 1½ times on large farms to nearly a six-fold increase on medium size farms. However, no dairy farms doubled their seasonal hired labor.

All livestock farms are oriented towards year-round work schedules and therefore are less subject to critical seasonal fluctuation in their labor needs. In contrast, the greatest seasonal fluctuation in labor inputs occurs on large and large-scale vegetable farms. Even smaller vegetable farms (sales $10,000 to $19,999) had vast changes in their monthly labor input. Although fruit farms required only modest increases in family and regular hired help, their hours of seasonal hired labor changed dramatically at peak season. On small fruit farms, work schedules doubled, but on large fruit farms hours worked per month by seasonal workers increased five-fold.

Is there any difference among farms as to when their peak season occurs? From a total labor input view, size of farm appears to have little influence on peak month of work. Except for the very smallest farms and the large farms (sales $40,000 to $99,999) peak work month was July. June was peak month for the two excepted groups. When the source of workers is considered, farms with above $5,000 sales worked their regular hired workers more hours during July than any other month. Regular workers on the smaller farms had a later peak season. Seasonal workers peak seasons varied from February to October. It would appear that size had little to do with this wide range of peak seasons. Size of farm is a factor only in the sense that certain types of farms in certain regions usually are rather small in terms of farm products sold as opposed to other types of farms located in a specified region especially large in their operations.

With the introduction of farm type there is a wider range of peak work months. For instance, peak month for total labor inputs occurs in June on cash grain and poultry farms and livestock ranches.

July is the month of highest labor usage for 5 types of farms. Yet, for other field crop, vegetable and fruit farms, regular hired and family work peaks during August. For regular hired workers the greatest demand for their time occurs during July on 8 of 11 different types of farms.

The general public opinion that seasonal workers are hired for only a short period during the summer months is not supported by labor practices of farms in this report. Granted, peak work month for regular hired and unpaid family workers follows the generally accepted patterns. But, peak demand for seasonal workers is about as varied as the types of farms. Only cash grain, vegetable and poultry farms and livestock ranches reported peak work months occurring in the summer months. Fruit farms heavily represented by citrus groves which are heavy users of seasonal labor had peak work months during December. Also, the high point of seasonal labor use on tobacco farms occurred in December as they were hired to strip burley tobacco leaves.

Thus, peak labor month differs each time we vary the factors that affect seasonality of farm labor. So far we have seen that to some degree, peak work month is affected by farm type, size, and kind of worker.

The remainder of the report will point out what effect farm production region has on inter-seasonal shifts in labor requirements, when peak season occurs, and how the shifts occur among different kinds of workers.

Seasonal Labor Practices Among Farm Production Regions

To discuss the total affects region has on farm labor usage, one would have to introduce demographic and economic characteristics of the region as well as the affects of physical environment. But for purposes of this report, discussion will involve only the latter affects.

The temporary nature of farmwork in many regions is caused not only by the traditions of the people who first settled in the area, but by the kinds of farming to which one may be limited because of the climate, topography and degree of soil fertility. The climate will limit the types of crops to be grown while the topography determines the size of cultivatable area. The peak work load on a crop farm in the more northerly regions will differ from the peak needs of a dairy or livestock operation in that same area. Until recently cropping patterns on Southeastern, Southern Plains, and Pacific Region farms were not determined so much by the weather as by personal preferences of the operator to have a single crop season. The weather in Florida, South Texas and California allows for year-round cropping practices. Thus, peak months of labor may be quite different from the regions that have wide variations in their annual weather. Even the same crops in the Southern regions will require maximum labor usage at a different month than a more northerly located farm. The data used in this report points out the differences in peak labor needs among the regions, the difference among the various farm types within a region and whether there is some difference due to size of farm. There appears to be some variation in peak months and considerable difference in source of labor and magnitude of seasonal variations in labor usage by size of farm.

Magnitude of Seasonal Change

The significance of the problems related to maintaining an experienced hired farmwork force due to the seasonal nature of most farming in this country is brought out by the magnitude of the change in the monthly work hours between slack and peak season. Even persons with fairly stable employment (those workers who averaged 150 days or more of hired work per year) worked appreciably more hours during peak season than they did during the slack months. During the peak month, regular hired workers' monthly hours rose more than 60 hours over what they worked during slow months on both medium and large-scale farms. The acuteness of the problem varies by farm type and among the different regions. In the Delta States, regular hired workers worked fewer hours each month than similar workers did in most other regions. But they had greater seasonal variation in their monthly work load than regular workers in any other region on farms with sales above $20,000 (table 3).

Percentagewise, the seasonal variation in hours of regular hired labor was least on the large-scale farms and highest on the smaller farms. The Lake States and Delta States farms were the only exceptions. In these two regions, as size of farm increased, seasonal variation in hours worked by regular hired labor became greater. On large-scale Delta States farms, regular hired workers increased their monthly work load by 88 percent whereas similar workers on large-scale Southern Plains farms increased their monthly work input by only 12 percent. Other large-scale farms with minimal seasonal changes in regular hired labor

Table 3.--Percentage change in hours worked between month of least farm work and peak season, by regular and seasonal hired labor, by size of farm and farm production region, 48 States, 1966

Region	Percent change, low month to peak month on--											
	Large-scale farms 1/			Large farms 1/			Medium farms 1/			Small farms 1/		
	All labor 2/	Hired 3/		All labor 2/	Hired 3/		All labor 2/	Hired 3/		All labor 2/	Hired 3/	
		Regular	Seasonal		Regular	Seasonal		Regular	Seasonal		Regular	Seasonal
	Percent											
Northeast	96	22	606	40	24	238	34	25	72	44	37	85
Lake States	55	59	955	42	38	72	64	49	121	56	51	213
Corn Belt	75	42	357	70	51	102	68	49	79	86	76	112
Northern Plains	79	48	324	62	57	63	102	65	482	84	93	94
Appalachian	60	38	4/	59	40	40	75	44	114	110	65	128
Southeast	67	11	520	66	21	1,613	54	34	150	55	49	391
Delta States	87	88	5/	121	100	516	90	69	6/	53	61	148
Southern Plains	39	12	742	47	26	142	56	22	266	62	39	227
Mountain	28	26	44	65	33	150	66	46	314	80	39	7/
Pacific	59	28	662	66	26	143	91	24	670	36	40	148
All regions	41	32	68	56	39	71	58	39	59	63	50	51

1/Farm size: large-scale farms, those that sold $100,000 or more in farm products; large farms, those that sold $40,000 to $99,999 of farm products; medium farms, those that sold $20,000 to $39,999 in products; small farms, those that sold $10,000 to $19,999 in products. 2/Includes family and hired labor. 3/Regular hired are those persons who worked 150 days or more on the farm surveyed for cash wages. Seasonal workers did less than 150 days of wage work for the farm surveyed. 4/Did no work during slack month, worked 150 hours during peak month. 5/Did no work during slack month, worked 214 hours during peak month. 6/ Did no work during 2 slack months, worked 152 hours during peak month. 7/Did no work during slack month, worked 199 hours during peak month.

were those in the Northeast and Southeast Regions. However farms in these two regions and the Southern Plains experienced exceptionally high variations in the hours worked by seasonal workers. Northeast and Southeast fruit farmers relied rather extensively on seasonal labor to harvest their crops while Southern Plains farmers used many hours of seasonal labor on field crops.

It appears that the magnitude of changes in work loads for seasonal workers was just the reverse of what occurred for regular hired workers. The larger the size of farm (in terms of sales), the greater the variation in seasonal hired labor. Hours of seasonal workers increased only 51 percent on the small farms compared with 68 percent on the large-scale farms. But, regionally there were much wider variations. For example, small Northeasterm farms increased hours of seasonal labor by 85 percent while such labor on large-scale farms in that area varied by over 600 percent between seasons.

Peak Seasons by Region

The peak work month varied for each kind of worker by region and farm type. There was also some difference in peak work month for hired workers among the different farm sizes. It appears that this is more closely associated with the differences in farm types than between the sizes of farms. For instance, regular hired workers on medium and large size Lake States farms worked more hours during July. This occurred because of the work pattern on dairy, livestock and cash grain farms that comprised a large percentage of medium size farms surveyed in the Lake States. These farms had considerable acreage in hay and

grain which uses a lot of regular hired labor at harvest time. Regular hired workers worked more hours during July in 8 of 10 regions on medium size farms and 6 of 10 regions on farms with sales over $40,000.

In contrast seasonal hired persons worked more hours during May on Lake States dairy, livestock and general farms. However, their peak work month on large farms was in November and large-scale farms in September. The September peak on large-scale farms was due mostly to their work on other livestock and other field crop farms.

Peak month for seasonal hired workers on medium size farms ranged from January through November with more regional peaks in August. Large-scale farmers tended to hire much of their seasonal labor during May. This reflects the heavy usage of seasonal labor on citrus farms in the Southeast at this time. Labor was also used rather extensively on large-scale decidious fruit farms in September and October which is reflected by the large number of hours worked during these two months.

Seasonal variation in labor usage occurs not only among different geographic areas but also among different types of farms within a given area. Also, a farmer may need to use his regular hired help more intensively at a different time than when he needs major effort from his seasonal help.

Peak work hours on medium size tobacco farms in the Southeast was a month earlier than it was on such farms in the Appalachian Region--July compared with August. The Southeast and Delta States cotton farmers' peak season is considerably earlier than it is on Southern Plains cotton farms. Peak work months on cash grain farms varies from June in the Southern Plains to August in the Northern Plains and Pacific Regions. The peak hours of labor on vegetable and fruit and nut farms ranged from early in the spring in the Southeast to September and October on many farms in the Northeast and Lake States.

In regions where there are many different types of enterprises, seasons varied somewhat within the regions. Northeast cash grain and other livestock farms used regular hired workers more in May while dairy farms needed them most in July and vegetable and fruit farms' work peaked later in the year. Peak work months for seasonal hired workers not only differed by farm type and region but also differed from that of the regular hired workers in the same region. In most instances peak hours for seasonal workers was earlier in the year than for regular workers. However, some regions work peaks for seasonal workers were later than for regular hired workers. These late peaks occurred mostly on dairy and other livestock farms in the Northeast and Northern Plains.

Appendix table 7,--Monthly hours of farmwork in the high and low months on farms that hired labor and had $50 to $2,499 in sales of farm products, by kind of worker and type of farm, 48 States, 1966

Type of farm	Monthly hours worked by:									
	All labor 1/		All family labor		Operator		Wife		Other family members	
	High month	Low month	High month	Low month	High month	Low month	High month	Low month	High month	Low month
	Hours									
Cash grain	698	357	474	226	156	65	143	--	229	160
Tobacco	290	163	269	152	121	61	84	47	68	39
Cotton	622	194	391	110	148	55	104	28	143	26
Other field crops	315	62	315	62	110	41	108	21	129	--
Vegetable.......	617	319	415	194	177	103	100	41	154	41
Fruit and nut	405	134	376	134	90	59	150	--	158	65
Poultry	345	120	264	112	198	83	---	--	88	29
Dairy	438	201	410	201	167	100	96	69	185	29
Other livestock	449	299	315	158	126	74	127	40	127	44
Livestock ranches	210	140	189	140	101	66	31	24	57	50
General farms	554	285	354	148	164	82	87	36	118	28
All farm types	493	305	321	160	132	71	80	45	110	44

1/ Includes family and hired labor.

Appendix table 2.--Monthly hours of farmwork in the high and low months on farms that hired labor and had $2,500 to $4,999 in sales of farm products, by kind of worker and type of farm, 48 States, 1966

Type of farm	Monthly hours worked by:									
	All labor 1/		All family labor		Operator		Wife		Other family members	
	High month	Low month	High month	Low month	High month	Low month	High month	Low month	High month	Low month
	Hours									
Cash grain	614	377	373	178	188	95	103	42	82	22
Tobacco	682	297	455	235	201	98	114	54	142	82
Cotton	899	199	536	153	233	80	188	26	166	29
Other field crops	848	302	445	104	88	47	176	--	184	57
Vegetable	518	274	494	274	234	102	176	82	84	78
Fruit and nut	694	450	434	230	163	79	157	57	114	71
Poultry	548	357	357	276	137	112	88	82	132	82
Dairy	722	302	457	273	227	137	116	69	114	67
Other livestock	617	362	455	223	183	103	107	68	165	52
Livestock ranches	767	627	483	352	267	229	66	62	171	39
General farms	685	404	490	240	252	125	137	52	136	63
All farm types	652	424	447	237	196	108	113	63	138	66

1/ Includes family and hired labor.

Appendix table 3 --Monthly hours of farmwork in the high and low months on farms that hired labor and had $5,000 to $9,999 in sales of farm products, by kind of worker and type of farm, 48 States, 1966

Type of farm	Monthly hours worked by:									
	All labor 1/		All family labor		Operator		Wife		Other family members	
	High month	Low month	High month	Low month	High month	Low month	High month	Low month	**High** month	Low month
	Hours									
Cash grain	791	270	543	219	261	100	102	47	180	65
Tobacco	848	306	603	233	253	111	163	67	187	55
Cotton	819	392	501	176	270	143	85	33	176	--
Other field crops	810	244	572	244	244	122	137	69	220	44
Vegetable	533	193	508	193	220	135	215	--	176	--
Fruit and nut	501	171	459	138	183	107	176	26	215	--
Poultry	492	381	254	217	179	147	31	29	44	41
Dairy	986	662	603	375	302	192	147	96	160	82
Other livestock	774	505	500	287	244	143	102	59	154	85
Livestock ranches	657	374	274	202	213	144	26	25	35	33
General farms	779	439	490	233	266	167	99	34	147	32
All farm types	823	490	535	271	249	136	121	68	167	67

1/ Includes family and hired labor.

Appendix table 4.--Monthly hours of farmwork in the high and low months on farms that hired labor and had $10,000 to $19,999 in sales of farm products, by kind of worker and type of farm, 48 States, 1966

Type of farm	Monthly hours worked by:									
	All labor 1/		All family labor		Operator		Wife		Other family members	
	High month	Low month	High month	Low month	High month	Low month	High month	Low month	High month	Low month
	Hours									
Cash grain.......	873	430	552	239	292	131	110	50	161	58
Tobacco..........	958	380	672	237	285	118	183	61	210	58
Cotton...........	856	584	526	333	248	150	123	89	173	71
Other field crops..........	878	486	576	289	284	165	158	40	150	79
Vegetable........	959	365	627	283	283	113	250	132	154	---
Fruit and nut....	799	420	498	209	236	138	168	61	144	--
Poultry..........	616	475	390	298	209	162	115	97	73	39
Dairy............	949	658	629	418	336	248	128	92	165	78
Other livestock..	844	532	559	297	285	173	109	72	165	52
Livestock ranches........	871	465	545	309	215	157	147	124	183	27
General farms....	879	539	610	321	296	160	139	80	185	81
All farm types.	893	547	589	321	292	175	126	80	171	66

1/ Includes family and hired labor.

Appendix table 5--Monthly hours of farmwork on large-scale farms that hired labor by kind of worker and farm production region, 48 States, 1966 1/

Kind of worker and months	Monthly hours worked per farm in:										
	All regions	Northeast	Lake States	Corn Belt	Northern Plains	Appalachian	Southeast	Delta States	Southern Plains	Mountain	Pacific
	Hours										
Operator											
January	229	282	216	210	227	178	274	163	269	257	238
February	216	258	211	197	210	177	262	159	252	248	223
March	245	274	226	220	255	207	287	217	270	281	243
April	276	291	265	285	282	233	286	250	265	293	270
May	298	301	323	313	309	244	302	266	267	320	284
June	296	297	309	306	311	249	297	270	267	315	292
July	297	310	307	294	319	251	292	254	274	328	304
August	286	292	290	277	307	238	284	240	257	317	310
September	291	303	326	291	303	250	283	259	266	304	301
October	295	313	355	311	293	242	282	257	264	313	288
November	263	280	285	286	244	221	268	232	265	264	253
December	237	273	242	230	232	196	272	188	272	253	236
All months, 1966	3,229	3,474	3,355	3,220	3,292	2,686	3,389	2,755	3,188	3,493	3,242
Wife											
January	88	99	33	56	79	66	116	91	134	133	75
February	84	84	31	52	74	61	110	97	125	139	73
March	92	90	33	62	80	71	118	110	134	131	89
April	97	92	33	75	98	86	122	89	131	134	92
May	100	86	47	88	95	99	125	114	134	121	106
June	99	80	45	77	92	86	122	113	131	121	134
July	106	100	46	83	109	110	122	96	134	135	122
August	105	92	46	85	109	107	120	113	131	133	119
September	105	105	51	97	101	86	89	106	131	127	113
October	104	126	52	104	112	99	85	91	134	110	32
November	99	120	40	87	115	86	115	106	131	102	79
December	91	126	33	62	85	66	115	109	134	109	75
All months, 1966	1,170	1,200	490	928	1,149	1,023	1,359	1,235	1,584	1,495	1,159

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Appendix table 5--Monthly hours of farmwork on large-scale farms that hired labor by kind of worker and farm production region, 48 States, 1966 1/ (Cont.)

Kind of worker and months	Monthly hours worked per farm in: All regions	Northeast	Lake States	Corn Belt	Northern Plains	Appalachian	Southeast	Delta States	Southern Plains	Mountain	Pacific
	Hours										
Other family											
January	100	88	49	100	100	119	66	176	73	96	146
February	92	82	46	94	93	110	62	164	68	84	136
March	106	88	49	105	114	119	66	264	73	91	154
April	114	86	48	120	127	116	65	161	71	93	161
May	129	57	49	142	143	119	66	165	73	122	171
June	185	64	116	192	212	134	289	185	169	190	146
July	192	88	118	204	227	152	296	137	173	198	164
August	182	107	101	188	215	149	282	130	145	194	160
September	133	172	61	124	158	149	65	161	94	127	195
October	126	88	51	123	140	152	66	165	75	134	172
November	112	86	50	118	103	149	65	237	73	113	150
December	104	88	51	100	102	119	66	176	75	114	154
All months, 1966	1,575	1,094	789	1,610	1,734	1,587	1,454	2,121	1,162	1,556	1,909
All workers 2/											
January	757	844	578	635	711	524	980	560	826	824	708
February	713	833	554	586	633	656	987	550	781	833	689
March	780	828	603	651	776	678	921	835	828	888	810
April	840	857	615	820	895	720	1,043	859	771	887	860
May	979	1,622	766	893	954	752	1,213	898	875	983	1,098
June	993	1,259	820	913	1,060	826	1,114	1,027	998	1,033	969
July	1,007	1,189	825	911	1,133	817	1,041	834	987	1,043	1,064
August	1,001	1,365	757	926	1,082	788	1,020	836	859	1,048	1,039
September	944	1,118	825	1,024	994	779	725	881	759	956	1,023
October	944	1,040	835	982	1,045	836	979	909	742	945	908
November	839	1,020	662	810	772	770	1,008	909	717	832	856
December	759	837	538	699	710	649	928	806	731	817	797
All months, 1966	10,556	12,812	8,378	9,850	10,765	8,795	11,959	9,904	9,874	11,089	10,821

1/ Large-scale farms: those with sales of $100,000 or more of farm products.
2/ Includes family and hired labor.

Appendix table 6--Monthly hours of farmwork on large farms that hired labor by kind of worker and farm production region, 48 States, 1966 1/

Kind of worker and months	Monthly hours worked per farm in: All regions	Northeast	Lake States	Corn Belt	Northern Plains	Appalachian	Southeast	Delta States	Southern Plains	Mountain	Pacific
	Hours										
Operator											
January	207	270	252	199	193	191	201	145	226	218	215
February	196	252	233	189	183	181	195	138	212	205	205
March	234	275	259	219	231	223	228	211	243	264	235
April	271	292	299	281	277	247	236	239	251	292	260
May	302	318	351	324	310	264	248	265	273	316	280
June	298	318	340	314	311	260	245	256	270	318	279
July	296	321	342	298	323	258	249	248	284	326	294
August	281	311	334	270	311	237	238	231	274	322	297
September	284	315	329	283	303	251	244	247	257	313	285
October	293	313	337	318	294	259	235	257	257	295	271
November	259	286	297	295	236	228	207	223	245	250	220
December	217	276	257	218	200	198	200	159	236	226	214
All months, 1966	3,138	3,547	3,630	3,208	3,172	2,797	2,727	2,619	3,028	3,345	3,055
Wife											
January	79	90	86	66	71	74	99	81	95	102	75
February	73	80	78	63	66	65	92	72	88	97	73
March	79	88	86	64	72	68	100	83	95	111	76
April	89	80	95	89	76	74	101	99	92	111	87
May	97	84	110	99	80	78	106	101	94	119	103
June	98	85	114	93	94	76	107	107	119	121	106
July	102	92	115	93	95	102	96	112	125	129	110
August	99	88	107	84	94	102	93	104	100	136	128
September	99	89	109	87	99	107	104	88	101	137	106
October	104	85	116	99	99	101	105	98	131	138	97
November	93	83	102	99	78	72	93	94	111	107	79
December	81	83	93	76	68	73	86	79	103	99	76
All months, 1966	1,093	1,027	1,211	1,012	992	992	1,182	1,118	1,254	1,407	1,116

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Appendix table 6--Monthly hours of farmwork on large farms that hired labor by kind of worker and farm production region, 48 States, 1966 1/ (Cont.)

Kind of worker and months	All regions	Northeast	Lake States	Corn Belt	Northern Plains	Appalachian	Southeast	Delta States	Southern Plains	Mountain	Pacific
	Monthly hours worked per farm in:										
	Hours										
Other family											
January	82	103	87	71	90	55	115	96	122	75	87
February	78	96	82	66	87	52	110	96	125	70	81
March	89	103	87	72	105	67	122	116	141	98	89
April	98	105	95	89	121	62	117	126	147	97	93
May	114	110	112	107	131	73	128	132	150	116	112
June	168	131	150	164	184	152	137	207	201	175	176
July	177	164	156	165	196	187	132	190	206	179	197
August	172	162	154	157	190	184	125	184	202	179	201
September	111	119	104	98	135	74	118	110	136	119	130
October	107	115	105	103	114	63	126	118	139	115	100
November	94	109	94	90	102	66	119	113	132	83	83
December	90	110	87	82	96	60	111	114	128	89	88
All months, 1966	1,380	1,427	1,313	1,264	1,551	1,095	1,460	1,602	1,829	1,395	1,437
All workers 2/											
January	634	743	741	593	634	566	613	494	753	746	676
February	602	702	702	540	640	544	584	543	721	682	616
March	700	801	763	619	708	630	691	778	803	798	692
April	808	814	845	783	845	683	968	824	854	881	772
May	883	867	936	876	905	720	901	1,005	903	965	873
June	941	903	978	916	988	794	825	1,092	1,063	1,124	913
July	927	986	996	876	1,027	865	748	921	987	1,015	969
August	908	981	965	810	994	837	721	889	964	1,092	1,021
September	837	933	890	772	936	737	726	791	849	973	898
October	848	868	898	861	892	741	816	828	895	925	810
November	759	784	858	797	725	648	808	762	876	787	687
December	670	762	729	615	671	595	962	595	775	749	667
All months, 1966	9,517	10,144	10,301	9,058	9,965	8,360	9,363	9,522	10,443	10,737	9,594

1/ Large farms: those with sales of $40,000 to $99,999 of farm products.
2/ Includes family and hired labor.

Appendix table 7.--Monthly hours of farmwork on large farms that hired no labor by kind of worker and farm production region, 48 States, 1966 1/

Kind of worker and month	Monthly hours worked per farm in: Northeast	Lake States	Corn Belt	Northern Plains	Appalachian	Southeast	Delta States	Southern Plains	Mountain	Pacific
	Hours									
Operator										
January	336	259	206	195		162	126		236	286
February	307	250	195	184		151	114		212	267
March	330	279	224	219		163	198		246	288
April	332	316	280	275		159	203		261	308
May	367	355	332	311		169	205		289	319
June	355	353	325	311		163	201		297	313
July	363	359	311	315		168	197		291	329
August	344	349	288	317		157	179		284	323
September	345	339	301	299		165	202		289	319
October	353	346	333	298		160	186		270	310
November	327	317	301	234		157	178		238	289
December	334	254	229	194		157	131		236	286
All months, 1966	4,093	3,776	3,325	3,152	2/	1,931	2,120		3,149	3,637
Wife										
January	68	119	82	55		104	113		119	154
February	64	110	78	51		97	105		110	143
March	63	115	89	57		104	138		123	154
April	67	138	109	68		102	163		142	161
May	68	149	130	85		108	140		156	149
June	67	161	121	84		103	119		152	146
July	68	156	114	88		101	147		229	149
August	67	172	105	99		95	112		223	146
September	67	175	112	94		99	134		197	146
October	68	159	134	86		101	144		152	154
November	67	125	124	74		99	159		116	150
December	68	111	95	59		101	140		119	154
All months, 1966	807	1,700	1,293	900	2/	1,214	1,614		1,838	1,806

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Appendix table 7.--Monthly hours of farmwork on large farms that hired no labor by kind of worker and farm production region, 48 States, 1966 1/ (Cont.)

Kind of worker and month	Monthly hours worked per farm in:									
	Northeast	Lake States	Corn Belt	Northern Plains	Appalachian	Southeast	Delta States	Southern Plains	Mountain	Pacific
	Hours					OK				
Other family										
January	155	109	66	89	2/	~~45~~	30	2/	50	139
February	144	105	64	83		~~42~~	29		47	129
March	155	125	72	90		~~45~~	57		58	139
April	158	124	95	108		~~44~~	106		56	148
May	188	136	128	131		~~45~~	125		103	152
June	187	183	177	210		~~58~~	209		162	152
July	205	190	170	210		~~58~~	209		166	150
August	196	176	153	203		~~51~~	183		162	146
September	171	139	100	129		~~44~~	122		110	140
October	174	142	107	106		~~45~~	225		87	133
November	158	130	91	86		~~44~~	106		56	130
December	162	110	72	78		~~44~~	35		50	132
77 All months, 1966	2,053	1,669	1,295	1,523		~~565~~	1,336		1,107	1,690
All workers										
January	559	487	354	339	2/	~~311~~	269	2/	405	579
February	515	465	337	318		~~290~~	248		369	539
March	553	519	385	366		~~372~~	393		427	581
April	557	578	484	451		~~305~~	472		459	617
May	623	640	590	527		~~322~~	470		548	620
June	609	697	623	605		~~324~~	529		611	611
July	636	715	595	613		~~327~~	553		686	628
August	607	697	546	619		~~303~~	474		669	615
September	583	653	513	522		~~308~~	458		596	605
October	595	647	574	490		~~305~~	455		509	597
November	552	572	516	394		~~310~~	443		410	569
December	564	475	396	331		~~302~~	306		405	572
All months, 1966	6,953	7,145	5,913	5,575		3,710	5,070		6,094	7,133

1/ Large farms: those with sales of $40,000 to $99,999 of farm products.

2/Insufficient number of farms surveyed to be statistically reliable.

Appendix table 8,--Monthly hours of farmwork on medium size farms that hired labor by kind of worker and farm production region, 48 States, 1966 1/

Kind of worker and months	Monthly hours worked per farm in:										
	All regions	Northeast	Lake States	Corn Belt	Northern Plains	Appalachian	Southeast	Delta States	Southern Plains	Mountain	Pacific
	Hours										
Operator											
January	209	276	246	194	186	186	178	159	205	220	195
February	197	259	229	183	174	177	168	154	194	210	194
March	232	283	251	217	215	213	212	202	226	261	225
April	271	298	300	271	283	235	225	232	232	297	243
May	304	329	348	316	314	254	231	254	258	323	263
June	304	330	342	313	317	257	223	255	266	323	262
July	307	333	344	300	329	279	222	256	270	341	270
August	291	320	334	270	319	274	230	237	257	325	264
September	293	318	337	287	309	264	230	241	255	320	262
October	294	313	341	312	294	256	222	247	247	296	255
November	256	279	304	285	228	224	193	223	221	243	200
December	222	283	251	221	193	205	187	174	210	223	201
All months, 1966	3,180	3,621	3,627	3,169	3,161	2,824	2,521	2,634	2,841	3,382	2,834
Wife											
January	87	96	82	86	79	66	83	95	112	99	79
February	81	83	76	80	74	56	77	88	104	95	77
March	88	87	80	86	83	56	95	103	115	106	98
April	97	98	95	98	97	68	99	92	114	106	95
May	109	107	112	117	106	83	94	95	128	106	85
June	109	115	116	112	102	88	104	100	130	101	111
July	113	117	115	105	111	117	105	88	130	123	116
August	110	112	112	98	123	119	88	95	127	113	103
September	110	112	109	100	110	127	100	103	133	119	107
October	111	102	104	116	99	113	90	96	143	115	123
November	99	90	100	110	83	77	75	92	132	100	69
December	90	90	83	88	82	87	73	105	132	98	77
All months, 1966	1,204	1,209	1,184	1,196	1,149	1,057	1,083	1,152	1,500	1,281	1,145

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Appendix table 8.--Monthly hours of farmwork on medium size farms that hired labor by kind of worker and farm production region, 48 States, 1966 1/ (Cont.)

Kind of worker and months	Monthly hours worked per farm in:										
	All regions	Northeast	Lake States	Corn Belt	Northern Plains	Appalachian	Southeast	Delta States	Southern Plains	Mountain	Pacific
	Hours										
Other family											
January	77	101	83	62	90	51	41	106	65	79	98
February	72	95	77	59	84	49	38	102	60	74	91
March	82	101	86	65	98	59	46	124	76	94	101
April	95	99	107	77	121	65	65	147	74	106	98
May	112	112	116	102	141	83	87	158	107	114	112
June	168	137	189	163	204	135	135	197	150	178	140
July	175	161	194	157	209	157	139	200	177	190	144
August	164	151	189	140	205	154	117	191	149	185	134
September	104	116	112	89	124	86	71	147	74	120	99
October	102	114	107	89	117	76	81	175	74	112	116
November	90	107	98	82	89	65	40	165	63	95	92
December	82	109	83	71	88	61	36	122	65	88	95
All months, 1966	1,323	1,403	1,441	1,156	1,570	1,041	896	1,834	1,134	1,435	1,320
All workers 2/											
January	619	781	643	568	540	512	582	498	654	634	676
February	582	723	598	517	516	489	479	476	612	661	652
March	669	779	690	590	647	567	587	741	699	787	714
April	759	800	769	715	837	622	657	794	692	868	772
May	848	873	893	833	929	679	665	804	785	899	1,185
June	901	908	971	869	998	759	722	884	900	997	813
July	922	967	982	826	1,030	851	739	905	952	1,055	836
August	893	948	976	764	1,041	854	693	854	864	1,017	816
September	805	866	850	722	897	760	675	771	752	907	756
October	817	860	853	815	859	743	660	836	764	852	805
November	724	780	760	765	670	624	539	829	704	732	621
December	646	769	654	615	658	599	524	566	650	657	648
All months, 1966	9,185	10,054	9,639	8,599	9,622	8,059	7,522	8,958	9,028	10,066	9,294

1/ Medium size farms: those with sales of $20,000 to $39,999 of farm products.
2/ Includes family and hired labor.

Appendix table 9 --Monthly hours of farmwork on medium size farms that hired no labor by kind of worker and farm production region, 48 States, 1966 1/

Kind of worker and month	Monthly hours worked per farm in:									
	Northeast	Lake States	Corn Belt	Northern Plains	Appalachian	Southeast	Delta States	Southern Plains	Mountain	Pacific
	Hours									
Operator										
January	283	242	184	174	181	147	210	223	227	204
February	265	222	171	167	169	140	194	214	223	194
March	288	249	201	217	207	160	242	237	270	217
April	301	297	269	276	265	163	251	249	308	230
May	332	343	317	319	283	170	261	275	334	261
June	327	343	312	316	277	167	253	286	345	257
July	334	342	301	325	293	166	249	296	354	276
August	322	332	263	314	277	164	245	283	345	291
September	325	332	277	298	276	165	249	270	321	269
October	311	342	310	291	275	169	257	262	306	248
November	278	305	287	237	216	157	254	246	250	203
December	276	243	207	191	203	146	219	230	223	199
All months 1966	3,642	3,592	3,099	3,125	2,922	1,914	2,884	3,071	3,506	2,849
Wife										
January	106	91	97	66	87	83	145	123	90	88
February	98	85	90	61	80	78	135	115	90	82
March	112	95	97	65	87	81	145	123	137	88
April	116	95	116	74	102	88	146	123	130	87
May	132	110	135	88	96	85	176	122	141	96
June	146	110	130	87	110	82	142	119	152	94
July	137	114	127	97	113	84	145	129	153	95
August	134	109	112	102	76	82	144	125	152	24
September	137	106	117	95	102	78	145	126	115	103
October	114	105	140	80	104	79	144	125	128	95
November	105	91	133	69	110	78	172	120	86	86
December	106	92	102	64	113	79	176	123	75	88
All months 1966	1,443	1,203	1,396	949	1,180	977	1,815	1,473	1,449	1,126

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Appendix table 9 --Monthly hours of farmwork on medium size farms that hired no labor by kind of worker and farm production region, 48 States, 1966 1/ (Cont.)

Kind of worker and month	Monthly hours worked per farm in: Northeast	Lake States	Corn Belt	Northern Plains	Appalachian	Southeast	Delta States	Southern Plains	Mountain	Pacific
	Hours									
Other family										
January	78	89	65	74	114	57	60	47	117	79
February	73	83	60	69	106	53	56	44	123	74
March	79	92	66	85	114	57	60	47	125	79
April	85	102	86	109	133	55	87	46	142	84
May	99	116	102	129	140	56	104	62	138	83
June	151	182	176	216	145	63	175	118	183	121
July	165	180	173	224	177	95	163	132	199	160
August	158	175	155	217	161	90	156	111	194	170
September	104	110	92	128	137	60	85	68	150	91
October	85	111	101	104	140	56	83	45	143	76
November	82	96	84	85	111	55	81	46	124	77
December	82	88	75	81	114	55	60	47	125	79
All mo: 1966	1,241	1,424	1,235	1,521	1,592	752	1,170	813	1,763	1,173
All workers										
January	467	422	346	314	382	287	415	393	434	371
February	436	390	321	297	355	271	385	373	436	350
March	479	436	364	368	408	298	447	407	532	384
April	502	494	471	459	500	306	484	418	580	401
May	563	569	554	536	519	311	541	459	613	440
June	624	635	618	619	532	312	570	523	680	472
July	636	636	601	646	583	345	557	557	706	531
August	614	616	530	633	514	336	545	519	691	585
Septebmer	566	548	486	521	515	303	479	464	586	463
October	510	558	551	475	519	304	484	432	577	419
November	465	492	504	391	437	290	507	412	460	366
December	464	423	384	336	430	280	455	400	423	366
All months 1966	6,326	6,219	5,730	5,595	5,694	3,643	5,869	5,357	6,718	5,148

1/ Medium size farms: Those with sales of $20,000 to $39,999 of farm products.

Appendix table 10.--Monthly hours of farmwork in the high and low months on farms that hired labor and had $10,000 to $19,999 in sales of farm products, by kind of worker and farm production region, 48 States, 1966

Region	Monthly hours worked by:									
	All labor 1/		All family labor		Operator		Wife		Other family member	
	High month	Low month	High month	Low month	High month	Low month	High month	Low month	High month	Low month
	Hours									
Northeast	929	645	612	414	325	235	140	92	147	87
Lake States	998	638	652	406	340	229	131	89	181	88
Corn Belt	821	442	554	283	294	164	105	72	157	47
Northern Plains	981	533	596	294	322	161	114	61	159	56
Appalachian	916	436	628	257	272	137	169	68	193	51
Southeast	844	544	591	379	250	165	141	100	204	106
Delta States	804	526	537	345	244	143	127	109	172	92
Southern Plains	850	526	511	295	254	168	105	78	159	45
Mountain	961	535	626	330	310	176	158	89	169	65
Pacific	835	612	527	313	244	169	138	94	145	48
All regions	893	547	589	321	292	175	126	80	171	66

1/ Includes family and hired labor.

Appendix table 11.--Monthly hours of farmwork in the high and low months on farms that hired labor and had $5,000 to $9,999 in sales of farm products, by kind of worker and farm production region, 48 States, 1966

Region	Monthly hours worked by:									
	All labor 1/		All family labor		Operator		Wife		Other family member	
	High month	Low month	High month	Low month	High month	Low month	High month	Low month	High month	Low month
	Hours									
Northeast	1,021	673	600	408	279	204	158	102	192	81
Lake States	1,005	633	610	379	297	199	122	83	200	97
Corn Belt	713	383	513	260	255	117	103	59	164	84
Northern Plains	749	357	537	260	289	144	85	63	164	53
Appalachian	773	345	544	234	232	117	134	60	179	57
Southeast	845	453	623	255	258	142	184	58	185	47
Delta States	806	341	542	177	207	86	206	44	136	39
Southern Plains	941	559	513	267	258	150	132	77	126	40
Mountain	954	610	667	452	288	144	174	93	220	154
Pacific	649	404	305	191	167	110	94	19	99	57
All regions	823	490	535	271	249	136	121	68	167	67

1/ Includes family and hired labor.

Appendix table 12.--Monthly hours of farmwork in the high and low months on farms that hired labor and had $2,500 to $4,999 in sales of farm products, by kind of worker and farm production region, 48 States, 1966

Region	Monthly hours worked by:									
	All labor 1/		All family labor		Operator		Wife		Other family member	
	High month	Low month	High month	Low month	High month	Low month	High month	Low month	High month	Low month
	Hours									
Northeast	545	216	472	216	210	124	132	---	140	86
Lake States	576	282	526	282	231	141	132	70	163	71
Corn Belt	651	217	404	188	187	97	74	47	145	35
Northern Plains	920	412	701	215	264	158	158	---	310	57
Appalachian	655	408	434	231	192	102	109	57	133	72
Southeast	606	419	369	174	169	90	115	35	101	48
Delta States	630	293	444	162	169	70	144	51	167	32
Southern Plains	820	333	626	220	224	118	154	94	266	8
Mountain	788	483	507	352	275	174	132	77	127	60
Pacific	494	324	435	248	168	100	96	46	176	30
All regions	652	424	447	237	196	108	113	63	138	66

1/ Includes family and hired labor.

Appendix table 13.--Monthly hours of farmwork in the high and low months on farms that hired labor and had $50 to $2,499 in sales of farm products, by kind of worker and farm production region, 48 States, 1966

Region	Monthly hours worked by:									
	All labor 1/		All family labor		Operator		Wife		Other family member	
	High month	Low month	High month	Low month	High month	Low month	High month	Low month	High month	Low month
	Hours									
Northeast	497	311	279	115	160	83	39	---	81	32
Lake States	384	173	343	173	135	75	92	70	122	26
Corn Belt	500	274	354	158	160	81	70	42	132	35
Northern Plains	541	159	254	159	192	91	101	51	---	---
Appalachian	475	304	287	168	119	65	81	49	89	54
Southeast	592	298	354	143	139	79	90	30	131	34
Delta States	608	245	443	125	143	57	114	30	188	35
Southern Plains	363	240	285	176	137	72	71	42	88	53
Mountain	623	354	404	157	202	91	67	54	140	12
Pacific	444	260	302	137	111	83	93	---	104	54
All regions	493	305	321	160	132	71	80	45	110	44

1/ Includes family and hired labor.

FARM PRODUCTION REGIONS

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